Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 32 April, 1949 No. 4

POSTOPERATIVE COMPLICATIONS OF THYROIDECTOMY

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THIS review will deal with the etiology, symptoms, treatment, and prevention of postoperative complications of thyroidectomy.

These complications may be due to hemorrhage, severe hyperthyroidism, tracheal obstruction, accidental removal of parathyroid glands, accidental injury to the recurrent laryngeal nerves, as well as to the removal of too much or too little thyroid tissue. The circumstances which may produce such a set of complications occur frequently. Moreover, they may be of such serious nature as to result in a permanently disabled patient or in an occasional death. Complications arising in the wound itself are important but are of a less serious nature. When strict attention is given to the improvements in preoperative and postoperative management, and a meticulous operative technique, the complications are, for the most part, avoidable.

Hemorrhage

Hemorrhage is a serious postoperative complication. It may cause sufficient pressure to produce complete tracheal obstruction, asphyxiation, and sudden death. When hemorrhage occurs beneath the skin flap the bleeding is usually venous in origin; but when beneath the sutured prethyroid muscles it is more often arterial in origin.

Hemorrhage under the skin flap may arise from the anterior jugular veins or from any of the small veins encountered in elevating the flap. This type of hemorrhage can be prevented by careful inspection of the wound and by securing accurate hemostasis of the bleeding points before the skin flap is replaced and the wound closed. When the prethyroid muscles are cut transversely the anterior jugular veins are severed (Fig. 1). To prevent severe postoperative hemorrhage from these vessels, a separate suture tie may be applied around them in addition to the mattress sutures employed in approximating the muscles transversely (Fig. 5). Subcutaneous hemorrhage occurs soon after operation, develops gradually, and is rarely of serious consequence. The patient complains of increasing pain in the wound. Inspection of the neck reveals abnormal oozing about the drains, if drains have been used, and a moderately tense bulging of the skin flap, which may be extensive when the hematoma is large. Hemorrhage from one of the anterior jugular veins develops rapidly causing extensive bulging of the skin flap. Unless there are symptoms of tracheal obstruction from pressure of the hematoma, the wound in subcutaneous hemorrhage is not opened at the bedside. Ordinarily there is sufficient time to move the patient immediately to the operating room where the wound is reopened, the blood clot evacuated, the bleeding point ligated, and the skin flap replaced. Hematomas of moderate size, in which the bleeding has stopped, are best evacuated by opening the wound surgically. To attempt evacuation by partially opening the wound, inadequate probing, or trusting that the hematoma will be absorbed eventually will result in delayed wound healing and in excessive scar

Read on January 13, 1948 at the Surgical Staff Seminar of the Minneapolis Veterans Hospital.
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formation. Furthermore, ineffectual probing may introduce infection into the hematoma and result in marked disfigurement of the final goiter scar.

Postoperative hemorrhage beneath the prethyroid muscles of arterial origin is from the superior thyroid artery or from branches of the inferior thyroid artery in the remnant of the thyroid gland. Venous hemorrhage in this location is from the lateral thyroid veins or from their junction with the internal jugular veins. Venous hemorrhage may also occur from the inferior thyroid veins as they leave the inferior pole of the gland, or from injured veins in the depths of a substernal cavity from which a substernal goiter was evacuated. Bleeding points from these areas are overlooked, occasionally, when the wound is closed. Hemorrhage is due to inaccurate ligation of these vessels. The ligature slips off during the strain associated with postoperative coughing or vomiting, and the hemorrhage usually occurs within twelve hours after operation. However, a severe hemorrhage from a branch of the inferior thyroid artery has occurred as late as the eighth postoperative day.

Postoperative hemorrhage beneath the sutured prethyroid muscles is usually arterial in origin and constitutes a hazardous emergency. The life of the patient is threatened with dramatic suddenness. Bulging of the neck is not in evidence as observed when the hemorrhage occurs under the skin flap; rather, the neck is distended, tense, and indurated from hemorrhage into a tightly enclosed fascial space. There is sudden severe pain in the neck, anxiety, and interference with breathing due to tracheal obstruction or collapse. The pressure rapidly increases producing stridor, cyanosis, complete asphyxiation, and death—unless corrective emergency measures are instituted immediately. The interference with breathing develops so rapidly, producing such a hazardous and dramatic situation, that patients who have had a thyroidectomy should never be left with untrained attendants during the immediate postoperative course. These patients should always be observed by assistants or nurses trained to observe the symptoms of increasing tracheal obstruction due to arterial hemorrhage, and they should be qualified to act immediately when serious interference with breathing is present. A life can be saved, in a moment, by completely opening the wound at the bedside and removing the blood clots. This produces immediate relief of the tracheal obstruction. Gentle but firm pressure with a gauze pack is made over the bleeding point until the patient can be taken to the operating room where the bleeding points are accurately ligated and the wound closed.

During subtotal thyroidectomy there are technical measures that can be instituted to prevent, to a large degree, the hazards of postoperative arterial hemorrhage. Many of these technical points are advocated by Lahey.[6,8,10] They can be used only when the operation is performed with adequate exposure, in a dry field and with good illumination. A greater exposure can be obtained in large glands by cutting the prethyroid muscles transversely and reflecting them upward and downward away from the superior and inferior poles (Fig. 2). By mobilizing the gland from the thyroid bed and rotating it medially, adequate exposure is obtained for the dissection of the inferior thyroid artery. If the operation is performed in a blood-stained field there is greater danger of inadequate hemostasis, postoperative hemorrhage, and injury to the parathyroid and recurrent laryngeal nerves.

With the superior thyroid pole well exposed, with traction downward and medially, the superior thyroid arteries can be dissected out from the surrounding areolar tissue and demonstrated as vascular trunks. A double ligature securely placed around these vessels is infinitely better than a single ligature. The ligatures should be placed approximately one millimeter apart so that the vessels are ligated at two separate points (Fig. 3). The vessels should not be cut too close to the inferior ligature. No matter how high the superior pole ascends it must be exposed so that the superior thyroid vessels can be accurately ligated without including a segment of thyroid tissue from the top of the superior pole in the ligature. If a mass of thyroid tissue is included with the vessels, it is impossible to tie the ligature tightly enough to prevent it from slipping postoperatively, during the strain produced by vomiting and coughing.

With the superior thyroid vessels and lateral veins ligated and cut and the great vessels of the neck retracted laterally, the lobe can be rotated medially, giving an adequate exposure for dissection of the inferior thyroid artery as a single trunk. It is found in the areolar tissue behind the gland, as it passes from behind the carotid artery to the posterior aspect of the gland, near the tracheo-esophageal angle. By ligating the inferior

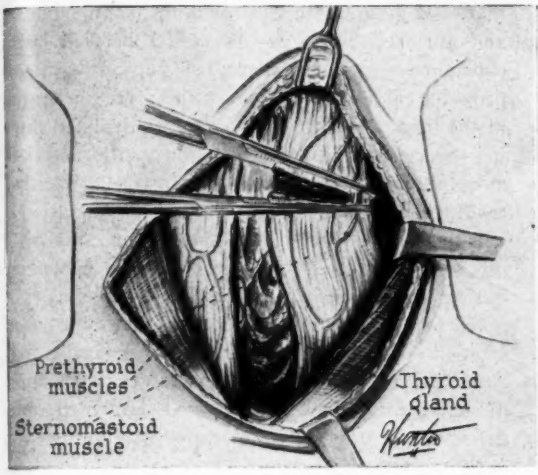

Fig. 1. Through a low curved collar incision, the skin, subcutaneous tissue, and platysma muscle are raised to the level of the notch of the thyroid cartilage. The medial border of the sternocleidomastoid muscle is freed, the prethyroid muscles split longitudinally, and cut transversely at a high level.

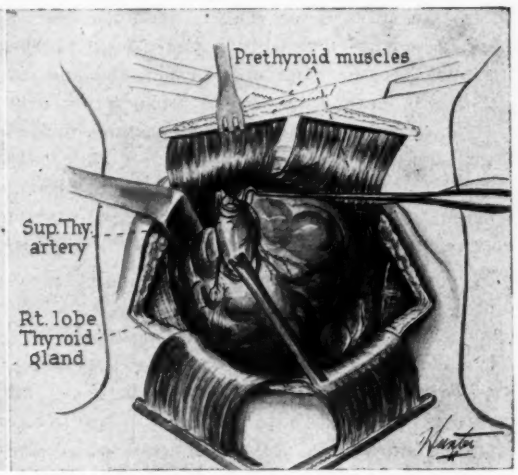

Fig. 2. The prethyroid muscles are reflected upward and downward exposing the thyroid gland. The superior pole is retracted downward, medially, and dissected free from the surrounding areolar tissue exposing the superior thyroid vessels for double ligation.

thyroid artery in continuity in its extracapsular course, bleeding from this vessel can be largely eliminated (Fig. 4). The vessel need not be ligated routinely; however, there is a distinct advantage in having it exposed, should troublesome hemorrhage arise from the remnant during the resection of the thyroid lobe. Diagramatically, the relationship of the branches of the artery to the recurrent laryngeal nerve is shown in Figure 6, *a* and *b*. If a hemostat is plunged into the remnant to clamp the artery, there is danger of injuring or ligating the recurrent laryngeal nerve. By rotating the hemostats and the gland medially, the hemorrhage can be controlled by ligating the inferior thyroid artery in its extracapsular course. Also, the surgeon's index finger may be used to compress the vessel against the cervical spine so that the bleeding remnant can be controlled, sponged, and the vessel individually snapped and accurately ligated. Mass ligatures and gland sutures have no place in thyroid surgery, if postoperative complications are to be avoided. Oozing from the thyroid remnant, which mainly comes from the terminal branches of the inferior thyroid artery, can be further prevented by suturing the lateral edge of the capsule of the remnant to the pretracheal fascia so that the cut surface is buttressed and compressed against the trachea (Fig. 4.) The surgeon must be careful not to indent or compress the trachea in accomplishing this phase of the technique.

A double ligature around the inferior thyroid veins, as they leave the inferior pole, is an additional measure of safety. Postoperative venous bleeding beneath the prethyroid muscles may arise from these vessels or from the lateral veins. Rarely must the wound be reopened and the bleeding point ligated. A careful inspection of the entire thyroid bed should be made in search of small points of oozing before the prethyroid muscles are sutured.

Thyroid Crisis

With the administration of the new antithyroid drugs for preoperative preparation, postoperative thyroid crisis or storm rarely occurs unless the patient with severe hyperthyroidism is inadequately prepared for operation. Clute[2] believes that, with improvement in the preoperative preparation of patients as practiced at the present time, serious thyroid storms can probably be avoided.

The etiology of a crisis is unknown. Thyroid crises have occurred in individuals with severe hyperthyroidism, especially in patients who resist, or respond poorly, to adequate preoperative preparation. A crisis may occur in elderly individuals, and patients over fifty years of age, or in those having hyperthyroidism for a year or longer. Other signs of dangerous toxicity may not be observed until the thyroidectomy is in progress. Marshall[4] states that during the first part of the operation severe hyperthyroidism is present if

NOTE: Figures 1 through 5 inclusive are the artist's illustrative reproductions made from the author's colored photographs taken during thyroidectomy at the Minneapolis General Hospital. The artist's sketches in Figure 6 were taken from illustrations by Lahey.[7,9]

there is a progressive rise in the pulse rate, a rising blood pressure with an increasingly widening pulse pressure, and an increasing demand for anesthesia depth with oxygen consumption over 600 c.c. of oxygen per minute. Conditions such as heart disease with decompensation, auricular fibrillation, pregnancy, diabetes, and acute infections increase the severity of hyperthyroidism and may be present in some cases of thyroid crises.

A postoperative thyroid crisis usually occurs during the first forty-eight hours, producing obvious symptoms and signs, indicating that a very serious state of toxicity is present or impending. The condition often begins with diarrhea and vomiting. The pulse rate continues to rise to exceptional rates, over 150. The temperature elevation is excessive, usually over 104 degrees. Sweating may be profuse. When dehydration occurs, the skin is dry and hot. Restlessness mounts into extreme activation. Psychic disturbances and a delirium which may become violent are present. There are periods of apathy, resembling coma. The condition is one of utmost gravity, from which the patient may not recover.

Postoperative storm is best prevented by adequate preoperative preparation and by limiting the extent of the thyroidectomy, according to the severity of the hyperthyroidism, and the operative reaction of the patient. The correct time for surgical intervention is when the patient has received the maximum benefit from his preoperative preparation. With the administration of the new antithyroid drugs, the pulse rate, basal metabolism, and weight should be normal. At the present time the possibility of a crisis can be reduced when the patient is properly prepared with adequate rest, sedation, a high carbohydrate diet, intravenous glucose, vitamin B complex, Lugol's solution, and propylthiouracil—or one of the new antithyroid drugs. As a last resort, the surgeon can interrupt the operation, when there are serious changes in the pulse rate, pulse pressure, or oxygen consumption, in order to avoid a crisis. Rea[14] recommends the use of spinal anesthesia as an adjunct to general anesthesia and to the operative management of severe hyperthyroidism, on the thesis that it would inhibit medullary adrenal releases during operation and forestall severe postoperative reactions.

When a thyroid crisis does occur, the postoperative therapy is intensified. In the presence of increased sweating, vomiting, and diarrhea, there is a greater demand for fluids, saline, iodine, and glucose. These are best administered by a constant intravenous drip. Ten per cent glucose provides calories and protects the glycogen stores in the liver which are being rapidly depleted during the crisis. Sufficient sedation in the form of morphine and barbiturates are given to control restlessness. The patient is kept in an oxygen tent; frequent sponge baths are given. According to Rea,[14] spinal anesthesia is also beneficial during a postoperative storm. Improvement is noted within twenty-four hours in favorable cases after these emergency measures are instituted. Such measures should be continued until all signs of active crisis have disappeared, at which time the usual postoperative therapy is administered until the patient leaves the hospital.

Tracheal Obstruction

Postoperative tracheal obstruction is caused by severe postoperative hemorrhage, edema, and collapse of the trachea. It frequently occurs as a late result of bilateral recurrent laryngeal nerve paralysis.

Tracheal obstruction produced by serious arterial or venous hemorrhage beneath the prethyroid muscles has been discussed. After the blood under tension is released and the hemorrhage is controlled, the symptoms of tracheal obstruction are relieved and tracheotomy is seldom indicated. If there is persistent difficulty in breathing after the tension is relieved, a tracheotomy should be done before the wound is closed. The edema of the larynx and upper trachea, associated with hemorrhage, may increase before it improves, especially following the manipulation and trauma of opening and closing the wound for a second operative procedure. It is an error to trust that the breathing will improve. Prolonged partial obstruction and anoxemia may result in a fatality if the operator postpones performing a tracheotomy. Whenever stridor, cyanosis, or any interference with breathing persists, tracheotomy is urgently indicated.

A gradual partial-tracheal obstruction may develop postoperatively due to edema. Edema of the wound spreading into the larynx or narrowed upper part of the trachea is caused by hemorrhage, infection, and surgical trauma. When symptoms of obstructive breathing develop as a result of edema, tracheotomy is indicated. Lahey[8] states that when in doubt, it is infinitely better to per-

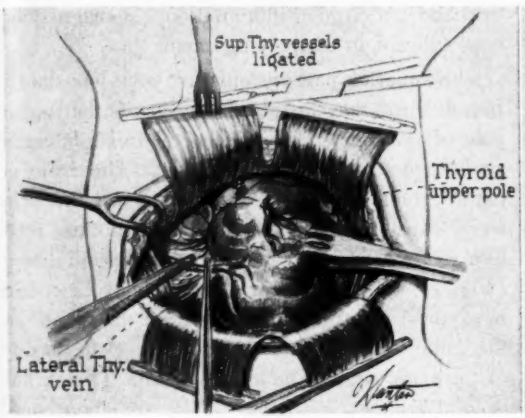

Fig. 3. The superior thyroid vessels are ligated and cut. The gland is rotated medially. The lateral thyroid veins are exposed, doubly clamped, cut, and ligated permitting further medial rotation of the gland.

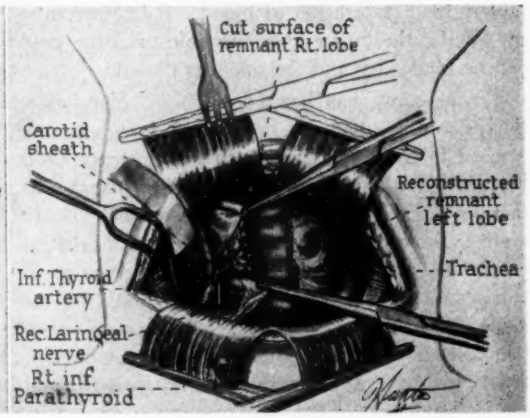

Fig. 4. The posterior surface of the gland is shown. The inferior thyroid artery is exposed and ligated in continuity as it passes from behind the carotid sheath to the gland. The course of the recurrent laryngeal nerve is shown. With the isthmus and the major portion of the lobes removed, the trachea, the cut surface of the right remnant, and the left remnant sutured to the pretracheal fascia are shown.

form an occasional unnecessary tracheotomy than to lose a single patient because of failure to take this precaution. Clute[2] states that tracheotomy should not be delayed in the presence of stridor. It is a serious error to await cyanosis, because the margin of safety is so narrow that any slight increase in obstruction may produce sudden death. The edema usually subsides within a week. The tracheotomy tube can be removed after the patient demonstrates that breathing has returned to normal.

Collapse of the trachea is a very rare postoperative occurrence. It has occurred in the presence of marked bilateral compression of the trachea due to long-standing pressure of an intrathoracic goiter. Collapse can occur during the operation after the pressure of the goiter has been removed. Apparently degenerative changes and atrophy of the tracheal rings account for the collapse. Carcinoma when directly invading the trachea may weaken the rings, with failure to restore an adequate airway, thereby necessitating tracheotomy. A noncollapsible endotracheal tube is frequently used in operating for intrathoracic goiters to avoid difficulties in administering an inhalation anesthetic, and to avoid complete tracheal compression during the extraction of the goiter. Then the collapse may not be apparent until after the tube has been removed. Ordinarily, the tracheal rings assume their normal outline when an intrathoracic goiter is removed and pressure is relived, but restoration of tracheal deviation is a more gradual process. The rare occurrence of tracheal collapse, whatever its cause may be, should be considered a cause of tracheal obstruction and treated by tracheotomy if serious interference of breathing is present. Tracheal obstruction may also occur as a late result of bilateral recurrent laryngeal nerve injury with bilateral paralysis of the vocal cords. During a six months' period, after injury to the recurrent nerves, the cords undergo atrophy and fibrotic contraction, bringing them close to gether in the midline. As the glottic space is narrowed, the patient's voice improves, but there is increasing difficulty in breathing. When the glottic space becomes so narrow that obstructive symptoms are severe (as indicated by the characteristic crowing on forced inspiration, stridor, and a sense of suffocation) a tracheotomy is indicated. In the presence of an acute upper respiratory infection and laryngitis, patients with bilateral paralysis of the vocal cords are in constant danger of suffocation. An emergency tracheotomy may be necessary in this condition.

Laryngeal muscle spasm is frequently observed as a patient awakens from an inhalation anesthetic. Usually the spasm can be relieved by administering oxygen and helium, atropine, or curare. Tracheotomy has been done when the condition persists.

An annoying complication occurs when a hole is accidentally made in the trachea. The opening must be closed by suture. When the mishap occurs in a

bloody field, aspiration of blood can be prevented by placing the finger over the hole until the field can be made dry and the opening closed.

Tracheotomy has been done high, just below the cricoid cartilage, because that is where the trachea is easiest to expose in the presence of a thyroid isthmus. Since the trachea is narrow at that level, it is incorrect to place a tracheotomy high. A stricture may develop due to cicatricial contraction and stenosis after the tube is removed. During thyroidectomy the isthmus should be removed and the trachea exposed. It is important to remove the isthmus (Fig. 4), not only in order to remove adequate amounts of thyroid tissue, but also because the trachea is then prepared, with valuable time saved, should a tracheotomy become necessary. In case of an emergency, one should then be able to do the tracheotomy quickly and easily at a lower level.

Parathyroid Tetany

Postoperative parathyroid tetany is caused by the removal of one or more parathyroid glands. Operative injury of the parathyroids, interference of their blood supply, thrombosis, edema, and fibrosis may also reduce parathyroid secretion sufficiently to produce transient tetany. Tetany will be permanent and complete if all parathyroids are removed, and will probably be transient and mild if only one or two glands are removed. Postoperative tetany is a rare complication and is usually transient when it does occur. In most large clinics, the incidence is less than 1 per cent. Bilateral ligation of the superior and inferior thyroid arteries does not appear to produce tetany.

In order to preserve normal parathyroid function, following thyroidectomy, the parathyroids should be preserved uninjured in their normal anatomical positions. A small strip of the posterior thyroid capsule extending from the superior to the inferior poles should be preserved, since parathyroid glands are most often located in that region. It is not necessary to search for the parathyroid glands routinely. However, during thyroidectomy, one should watch for them and be able to identify them. In order to locate, recognize and protect these small structures, it is necessary to have a thorough knowledge of their appearance and normal location. The structures are easier to find when an adequate exposure of the posterior capsule of the gland is obtained in a dry field and under good illumination. A magnifying lens will aid in identifying them.

The superior parathyroids are most constantly found near the posterior aspect of the upper pole of the thyroid gland where it rests laterally against the trachea and larynx. The inferior parathyroids are most often found on the posterior capsule of the thyroid gland, in close relation to the branches of the inferior thyroid artery (Fig. 4). However, parathyroids may be found in atypical positions such as within the gland, on the anterior or lateral surface, or well outside of the gland, and in the mediastinum. Their color is light mahogany-brown. They are about one-half the size of a small pea, have rounded edges, and are covered by a glistening capsule. The texture of the parathyroids is more firm than a globule of fat. Being supplied by an end artery, they appear to be movable on a narrow pedicle. By observing these characteristics of parathyroids, one can preserve them in most instances. However, one can never be certain that a structure is a parathyroid gland except by microscopic examination. Occasionally a structure is left in situ, on the assumption that it is probably a parathyroid without its identity being absolutely established. In large adenomatous goiters, intrathoracic goiters, and in cases of recurrent hyperthyroidism, injury to the parathyroids is more frequent because there is greater variation in their location. Greater care is necessary in operating on these patients if injury to the parathyroids is to be avoided.

Transplantation of parathyroids from one individual to another offers little chance of restoring normal parathyroid function. Auto-transplantation, as practiced at the Lahey Clinic, may be of benefit, though the actual value of the procedure is difficult to evaluate. Parathyroids are accidentally removed often enough to warrant a careful routine search for them on the surface of the resected thyroid tissue. If a suspicious parathyroid body is found, a tiny biopsy is taken for subsequent microscopic verification and the tissue is transplanted into a dry pocket made in the belly of the sternomastoid muscle before the wound is closed. Cattell[1] has shown that in 472 possible parathyroid implantations, 160 (34 per cent) were actually parathyroid glands by microscopic examination. None of these patients developed postoperative tetany.

Severe tetany occurs within two or three days postoperatively, whereas the milder forms develop later. In tetany there is an increased irritability of the peripheral motor nerves. The patient complains of stiffness in the muscles of the hands, legs, face, and neck. There may be cramps and muscular twitchings of the muscles of the extremities and face. Marked muscle spasm occurs in the hands when the nerve trunk is deprived of its circulation by means of a blood pressure cuff. This response is due to asphyxia, and is called Trousseau's sign. The facial and abdominal muscles may be forced to contract violently by the mildest stimuli. Spasms are painful and may occur spontaneously. Contraction of the facial muscles can be produced by mechanical stimulation, Chvostek's sign, when the facial nerve is gently tapped in front of the ear. Numbness and tingling of the face, hands, feet, and legs may be present. Erb's sign is elicited when muscular contraction is produced by stimulating a motor nerve with a much weaker galvanic electrical stimulus than is normally necessary. The response is obtained with less than 5 ma., while normally over 6 ma. are required. Tetany of longer duration produces ectodermal changes, such as bilateral cataracts, courseness and thinning of the hair, and rigid nails. Gastrointestinal disturbances occur with abdominal pain, and alternating constipation and diarrhea. Excitement, exertion, and overbreathing may precipitate an attack of muscle spasm. Epileptiform convulsions, hyperpnea, salivation, severe depression and death will occur in permanent and untreated tetany.

There is a decreased concentration of serum calcium from a normal of between 10 and 12 mg. per cent, to 8 and 6 mg., or even lower; with an elevation in the serum phosphorus from the normal of 3 or 4 mg. per cent, to 6 or 8 mg. per cent. A blood calcium of 7 or 8 mg. per cent is usually found in transient or latent tetany. Presumably, the hyper-irritability of the motor nerves is due to a diminished amount of ionized calcium in the blood.

According to MacBryde,[11] the treatment of hypoparathyroidism may be considered under two headings: (1) the acute attack, and (2) chronic tetany.

A patient may die in the acute attack from severe laryngeal spasm, diaphragmatic spasm, or from repeated epileptiform convulsions. Prompt and effective treatment is necessary. Intravenous calcium is given. Calcium chloride is very irritating to perivascular tissues if leakage occurs. From 10 to 20 c.c. of a 5 per cent solution will terminate most attacks abruptly. Calcium gluconate is less irritating to the tissues and can be admin-

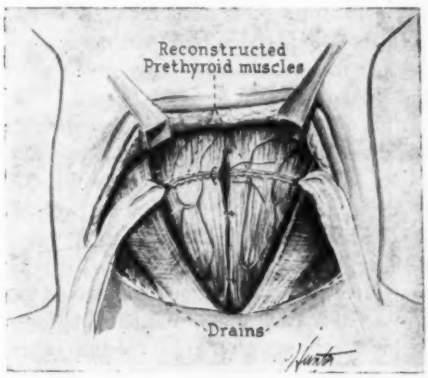

Fig. 5. The prethyroid muscles are reconstructed using fine Lembert and Halsted mattress sutures. Small rubber drains placed in each thyroid bed are brought out laterally through the prethyroid muscles and skin incision.

istered intravenously or intramuscularly in doses of 10 to 20 c.c. of a 10 per cent solution. The blood calcium will be restored to normal promptly, but the effect is transient in severe tetany. Within one to four hours the serum calcium will fall to its previous level. The intravenous injection may be repeated once or twice if necessary until other therapeutic measures become effective. One to three cubic centimeters of parathyroid hormone (100 U.S.P. units per c.c.) should be given intravenously or intramuscularly immediately after the calcium is administered. Within a few hours the serum calcium is raised. The peak effect is from eight to eighteen hours, while all effect is lost in from twenty to twenty-four hours. Daily injections of the extract are required in a patient with severe hypoparathyroidism. The disadvantages of the extract for continued therapy is that it is expensive, inconvenient to administer, and the patient usually develops a tolerance so that larger doses are required; and finally little or no response occurs.

The treatment of chronic tetany should begin immediately after the acute attack and as soon as it is evident that the patient cannot maintain a normal serum calcium level. A high oral calcium intake should be administered. From 5 to 15 gms. of calcium lactate or gluconate daily are usually advisable. MacBryde[11] has found that

this amount of calcium is not disagreeable. It reduces the cost of treatment, since the dose of dihydrotachysterol varies with the severity of the case and the amount of calcium ingested. Dihydrotachysterol (Hytakerol) will maintain serum calcium within normal limits even in the most severe cases of hypoparathyroidism. It is taken orally in capsules containing 2.5 mgs. or in a 0.5 per cent solution, 1 c.c. representing 5 mg. The initial and maintenance doses are given according to the serum calcium levels. Two to four teaspoonfuls of calcium lactate or gluconate are taken throughout the day. The serum calcium can be raised more rapidly if four capsules (2 c.c.) daily are given for three days, then two capsules (1 c.c.) daily until the serum calcium level is 9 or 10 mg. One capsule (0.5 c.c.) daily, or less often, is the usual maintenance dose which must be determined for each individual patient. By using this schedule the normal serum calcium is reached within seven to ten days. When the drug is stopped the calcium level falls slowly, over a period of two to three weeks. The advantages of dihydrotachysterol is that it is effective orally, is stable, is less expensive, has a prolonged action, and the patient does not develop a tolerance. Frequent blood calcium determinations are necessary until the maintenance dose is established; then it need be determined only every two or three months. The amount of calcium excretion in the urine can be determined by the Sulkowitch test which will give rough estimations of the blood calcium levels. In excessive amounts, the drug may cause hypercalcemia and severe toxic effects.

According to MacBryde,[11] Vitamin D concentrates in doses of 50,000 to 150,000 units with large doses of calcium lactate or gluconate taken orally will give similar results to those obtained with dihydrotachysterol.

Dessicated thyroid promotes calcium absorption and tends to maintain a normal serum calcium when hypothyroidism as well as hypoparathyroidism is present. The dose is based on the amount required to restore the basal metabolic rate to normal.

Recurrent Laryngeal Paralysis

Injuries to the recurrent laryngeal nerve occurring during thyroidectomy are due to cutting, crushing, or including the nerve in a ligature. Lahey[7] has shown in over 10,000 recurrent laryngeal nerve dissections that the nerve withstands dissection, gentle handling, and palpation while slightly stretched without immediate or delayed interference with function.

Most recurrent nerves are injured high in their extralaryngeal course at a point below where the nerve passes under the lower border of the inferior constrictor muscle of the pharynx to become intralaryngeal. At this level the nerve passes very close to the superior branch of the inferior thyroid artery, as the artery ascends in the thyroid gland close to the upper part of the trachea or the cricoid cartilage (Fig. 6, *a* and *b*). This vessel is frequently torn during resection of the thyroid lobe so that a hemostat plunged into the remnant as the vessel retracts, may also grasp the nerve. Injury to the nerve at a lower level is much less common, because the course of the nerve from its lower tracheo-esophageal position is obliquely upward, forward, and inward toward its extralaryngeal termination. The nerve may pass behind or in front of the inferior thyroid artery, or between its bifurcation (Fig. 6, *b*, *c*, and *f*). Occasionally an anomalous recurrent nerve will pass at a higher level directly from the vagus nerve to the larynx (Fig. 6, *d*), or it may descend only to the level of the inferior thyroid artery, around which it passes before ascending to the larynx. There may also be a rare anomalous extralaryngeal division of the nerve into adductor and abductor fibers before it enters the larynx (Fig. 6, *e*). The surgeon must be aware of the occasional existence of these anomalies to avoid injury to the nerve during its dissection. The nerve is in danger when surgery is performed for large adenomas adjacent to the posterior capsule, intrathoracic goiters, recurrent hyperthyroidism with excessive scar formation, or when a total lobectomy is necessary. In such cases the nerve may be displaced, or so closely encroached upon, that it must be exposed in order to avoid injuring it.

The nerve contains abductor and adductor fibers carrying impulses which produce opposing muscle actions. In addition, there are co-ordinating impulses concerned with speech and breathing. A rare condition of serious interference with breathing could occur during operation in a patient whose recurrent nerves divided into adductor and abductor fibers before entering the larynx, provided bilateral injury occurred, selecting only the abductor fibers of the bifid nerves.

The cords would then be adducted, the glottic space narrowed, and immediate serious obstructive breathing could then occur.

Injury to one recurrent laryngeal nerve results in a flaccid paralysis of the cord. In a few months the cord becomes fixed in the midline, due to atrophy, fibrosis, and contraction. There is usually no interference with breathing because the normal cord can be abducted sufficiently to provide an adequate airway. Occasionally an audible stridor can be heard in these cases after marked physical exertion because the glottic space is narrowed by the paralyzed cord. There is usually an immediate change in the voice which is largely overcome by compensation as the normal cord approximates itself to the paralyzed cord. However, unilateral injury frequently passes unnoticed by the patient and the surgeon. The only inconvenience may be a cracking of the voice when used with force. The diagnosis should be established by careful laryngoscopic examination. The cords should be examined in all cases operated upon for recurrent hyperthyroidism. If a unilateral paralysis of the cord is discovered, the normal recurrent nerve must, by all means, be preserved if a bilateral paralysis is to be avoided.

When both recurrent laryngeal nerves are injured, the innervation of both vocal cords is lost, including the ability to adduct or abduct the cords. They become flaccid and assume the cadaveric position. Difficulty during the operation in the patient's breathing is rarely encountered. Postoperatively, the patient is unable to tense or adduct the cords, so that the voice is lost for anything more than a whisper. Usually the voice begins to return within six months. As a result of atrophy, fibrosis and contraction of the cords, the laxity disappears, the cords become more tense, and the voice partially returns. As the process continues and the glottic space is narrowed, there is further gradual improvement in the voice. However, about this time the patient begins to have difficulty in breathing through the fixed narrowed glottic space; the cords vibrate, producing the characteristic crowing sound heard on forced inspiration associated, sometimes with the slightest exertion or physical activity. A laryngoscopic examination will reveal the paralyzed cords. The activity of some of these patients may be markedly limited by the interference with breathing so that a tracheotomy is indicated. These patients may become anoxemic with the slightest exertion. An emergency tracheotomy is indicated if an acute laryngitis precipitates suffocation.

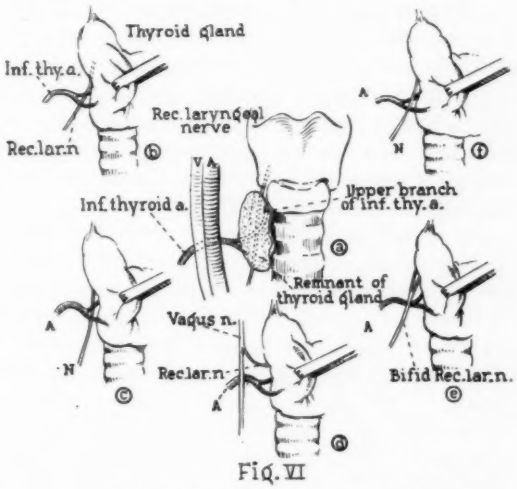

Fig. 6. Sketches showing *(a)* the diagrammatic relationship of the inferior thyroid artery and the recurrent laryngeal nerve to the remnant of the thyroid gland; *(b, c, d, e, and f)* the variable course of the recurrent laryngeal nerve in relation to the inferior thyroid artery.

There are several procedures available to patients with long standing abductor paralysis. A permanent tracheotomy with a flap valve which automatically closes on expiration can be performed. This will give an adequate airway and will allow the patient to speak to the degree that the voice had previously returned. The operation practiced by Lahey and Hoover[9] is a submucous resection of one of the paralyzed cords. The operation provides an adequate mucous membrane lined airway in the larynx, but there is further loss of voice which resembles a hoarse whisper. The advantage of the procedure is that a permanent tracheotomy tube is no longer necessary. This is also true of the King operation or its modifications. In the operation of laryngoplasty described by King,[3,5] the arytenoid cartilage is dislocated, rotated, and pinned back to the thyroid cartilage by two extralaryngeal stitches so that an adequate airway is provided with little, if any, change in the voice. Kelly[4] modified the King operation by excising the arytenoid cartilage extralaryngeally through a window in the thyroid cartilage. Wright[15] advocates that, after the arytenoid cartilage is delivered, the posterior end of the vocal cord be sutured to the external peri-

chondrium so as to secure a wider glottic space. In the McCall and Gardiner[13] modification of the King operation, the arytenoid cartilage is not removed, but anchored in the window of the thyroid cartilage using a direct laryngoscope as a guide. Late anastomosis of injured recurrent nerves has not been successful. Within six months the vocal cords become fixed, contracted, with ankylosis of the arytenoid cartilages. If nerve regeneration does take place, the cords are too fixed to respond to their impulses Whether a small nerve containing both adductor and abductor fibers and carrying impulses with opposing muscle actions can regenerate, restoring normal function, is not definitely known. Whenever an anastomosis of the nerve is undertaken, the anastomosis should be done early with a true anatomical approximation. If a bilateral nerve injury is discovered while the patient is still on the operating table, Lahey[7,8] advises that the wound be reopened and a repair attempted. If the injury is not discovered until several hours after the operation, he advises waiting for ten days to determine whether cord function returns. If it does not return and the patient's condition is good, he recommends early repair. This offers practically the only chance of restoration of function, since the arytenoid muscles are still movable and the cords are not fibrosed.

For over a period of ten years the dissection of recurrent nerves, as performed by Lahey[7] has been practically a routine procedure in thyroidectomy. It is recommended as a safe and justifiable procedure which diminishes, if not largely eliminates, injuries to the nerve. After adopting this procedure, a reduction in the incidence of recurrent laryngeal paralysis from 1.6 per cent to 0.3 per cent is cited.

Anyone trained to do thyroid surgery should know the course of the recurrent nerve accurately and be able to demonstrate it. The attitude that a nerve will never be injured if it is not seen and if a strip of thyroid tissue is left posteriorly, is false. Because of the danger of injuring the nerve, one should not persist in locating it in a blood-stained field, or under adverse circumstances. The nerve can be preserved by exposing it whenever the dissection or resection of the thyroid encroaches upon its course. Adequate exposure for this dissection is obtained after the superior thyroid vessels and lateral veins are ligated and severed so that the lobe can be lifted from the thyroid bed and rotated medially (Fig. 4). The carotid sheath is freed from the gland and the great vessels of the neck retracted laterally. The inferior thyroid artery is demonstrated in the fine areolar tissue in this area between the esophagus and the trachea. At this point the recurrent nerve passes upward, forward, and inward, adjacent to the trachea toward the bifurcation of the inferior thyroid artery (Fig. 4 and 6). If the areolar issue is stained with blood, the color and the appearance of the anatomical structures will be so disturbed that the dissection will be difficult or impossible without greatly endangering the nerve. Unless there is an adequate exposure, a dry field, and a good light, the nerve should not be dissected.

Hypothyroidism and Persistent Hyperthyroidism

Postoperative hypothyroidism and persistent hyperthyroidism are a result of removing too much or too little thyroid tissue. One can have a more accurate understanding of this problem if the amount of tissue left as a remnant is indicated, rather than the amount of tissue removed. Roughly, the remnant may be designated as being small, moderate, or large in size. Several factors influence the amount of gland to be left behind as a newly constructed thyroid remnant. With a knowledge of these factors, the surgeon may still not succeed in accomplishing an accurate resection, or tailoring a remnant of appropriate size for every individual. If an error must be made, it is infinitely better in most cases to take a little too much than too little tissue. A mild degree of hypothyroidism can be satisfactorily controlled medically with thyroid extract.

A radical resection should be done in individuals with severe hyperthyroidism, who have large glands, who are young and who have had the disease for a long period of time. Patients resisting preoperative preparation should also have more radical resections. Before the days of thiouracil, when iodine alone was used for surgical preparation, the degree of involution of the gland was considered to be a most important factor. A well involuted gland shrinks markedly, becomes firm, pale, and avascular. A more radical resection was indicated in the glands that did not involute well. A more radical resection is usually done in exophthalmic than in adenomatous

goiter and patients with recurrent hyperthyroidism obviously require a more radical resection.

A less radical resection should be done in mild hyperthyroidism, in older individuals, and in children. The patients showing a good response to surgical preparation and good involution of the gland should have less radical resections. Children with hyperthyroidism should be left with more thyroid tissue than is left in the adult as postoperative myxedema in a child interferes with normal mental development and growth, and is to be avoided.

Persistent and recurrent hyperthyroidism are often a result of inadequate resection or attempting to do a subtotal thyroidectomy without adequate exposure, or adequate mobilization and rotation of the thyroid lobes. Large sections of the posterior aspect of the gland and retrolaryngeal extensions are often overlooked. Leaving portions of a hyperplastic isthmus or a pyramidal lobe may also cause recurrences.

Tracheal Irritation

Following a thyroidectomy, there is frequently some degree of tracheal irritation or tracheitis, with cough, and expectoration of mucus. It seems to be caused by rough handling of the larynx and trachea in difficult goiters with retrolaryngeal and substernal extensions. The dissection of the isthmus from the front of the trachea causes little difficulty. Mild irritation usually disappears in a day or two without special treatment. In other cases, steam inhalations make the patient more comfortable, loosens the mucus, and facilitates expectoration. If mucus accumulates in the trachea or upper respiratory passage during operation, an intratracheal catheter should be passed to suck it out. Anesthesia through an endotracheal tube, properly introduced, is deal for thyroidectomy. An airway is maintained at all times. Tracheal secretions can be aspirated during, and at the end of the operation. If sufficient mucus develops postoperatively to interfere with the patient's breathing, suction bronchoscopy should be instituted immediately. This is the safest means of preventing or treating an atelectasis.

Exophthalmos

Ocular complications may occur in patients having severe exophthalmos. If the eyes are left unprotected by incomplete closure of the lids, the eyes may be injured during the operation or early in the postoperative course. Conjunctivitis, injury to the cornea, corneal ulcers, or other injuries to the eye may occur. The eyes should be protected during the operation with an ophthalmic lubricant and vaseline strips. It may be necessary to suture the lids closed before operation and leave the sutures in place for a few days when the exophthalmos is severe in order to protect the eyes. Following thyroidectomy, the exophthalmos gradually improves in most cases. Rarely, in severe exophthalmic goiter, a progressive exophthalmos may develop postoperatively with marked protrusion of the eyeballs and permanent loss of the eyes. A competent ophthalmologist should observe and treat these eye complications.

Wound Complications

Wound complications following thyroidectomy are usually not serious. An acute infection of the wound rarely occurs. Occasionally a generalized brawny edema of the muscles, fascia, and skin flap is observed postoperatively. This will quickly subside with the application of hot packs. Small collections of serum beneath the skin flap will be absorbed in a short time. Larger pockets or collections of serum should be drained by probing through a small opening in the incision. Occasionally, a small rubber tissue drain may be inserted until the walls of the space collapse and become adherent. Deep induration and swelling of the wound may be present for five or six weeks, especially if the muscles have been cut transversely.

Lahey[6,10] advises drainage of the thyroid bed through the lateral angles of the wound. Kocher drained his cases through a stab wound below the incision. This adds an additional scar which may be quite unsightly, though the goiter scar may be excellent. It then became customary to insert the drains in the midline through the incision but this is undesirable because the drains pass between the separated fibers of the prethyroid muscles, so that when the drains are withdrawn, adhesions form between the skin, subcutaneous tissue, and trachea. These adhesions either contract and distort the incision, or the scar may ascend or descent with the trachea with each act of swallowing. If drainage following thyroidectomy is instituted, a small Penrose drain may be placed in each thyroid bed and brought out laterally through the prethyroid

muscles and skin incision (Fig. 5). There will be less danger of adhesions distorting the goiter scar in this position; also, the skin closure is flexible over the fascia and underlying muscles. The drains are removed in twenty-four to forty-eight hours, depending upon the quantity of serosanguinous drainage present. When the surgical field is unusually dry, the wound may be closed without drainage. Better looking scars result when drains are removed early or not employed at all.

When drains are placed in a deep mediastinal pocket, left after the removal of an intrathoracic goiter, the drains should not be removed until the pocket has collapsed and its walls become adherent. Lahey[8] advises draining these cavities from seven to eight days, plus following the removal of the drain with a baby catheter until the cavity is completely obliterated. Fluid will accumulate in these cavities if they are not allowed to collapse, or if the drains are removed too early.

The skin clips are applied loosely and removed on the second and third postoperative days. If the skin clips are left in too long, the small barb on the clip will produce pressure necrosis, causing unsightly puncture scars which are much like the scars seen where coarse, interrupted, nonabsorbable sutures are employed. Even though the skin clips are removed early, the skin incisions do not break open. Postoperative thyroid patients have marked discomfort, even with limited extension of the neck, which serves as a protective mechanism so that traction placed on the skin incision is insufficient to produce a wound separation or have any influence on the final width of the scar. A uniform, moderate pressure bandage applied over the wound during the first forty-eight hours will reduce the incidence of serum collections beneath the skin flap.

The incision is a low, curved collar-incision placed the breadth of one finger above the clavicle and two fingers above the sternal notch. In glands with a greater outward growth, the incision is made a little higher to allow for more of a drop in the final scar. Ordinarily, the final scar is located at the junction of the neck and chest where it can be easily concealed in women with a necklace. When the scar and underlying fascia become adherent, producing an irregular angulation of the incision after primary healing takes place, the final appearance of the scar can be greatly improved by massaging and stretching the incision to lengthen the adhesions. A revision of the incision should not be attempted within a year; and then a revision is seldom necessary. Lahey[8] states that keloids respond poorly to postoperative irradiation. He prefers to treat them by excision, followed by irradiation of the incision within a week in order to prevent the formation of another keloid.

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Routine chest roentgenograms are now made on all patients at the time of their admission to all (Veterans Administration) hospitals and on all veterans who visit our outpatient departments for pension or compensation examinations, unless they have been examined within the previous six months. In addition to this, annual roentgenograms are to be obtained for all hospital employes and all patients who are hospitalized for more than one year.—JOHN B. BARNWELL, M.D., *Am. Rev. Tuberc.*, July, 1948.

THE CONTROL OF TUBERCULOSIS IN MINNESOTA

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THE MIDWESTERN state of Minnesota, having an area of 84,068 square miles, a population in 1940 of 2,792,300 and being an agricultural and mining area, enjoys one of the lowest mortality rates from tuberculosis in the United States.[4,6] In 1946, the comparative statistics relative to tuberculosis in Minnesota stood as shown in Table I.

TABLE I. COMPARATIVE RATES FOR TUBERCULOSIS MORTALITY AND BEDS PER ANNUAL DEATH, 1946.

	Mortality Rate per 100,000	Beds per Annual Death
Minnesota	21.1	3.54
United States	35.9	1.70

Despite this favorable position among the several states and continually improving tuberculosis control program the public health leaders of the state estimate that there are still some 2,500 cases of active tuberculosis within the eighty-seven counties of Minnesota. It is probable, however, that the relative wealth of the area, the absence of overcrowding, the vigorous stock of the people, and the long freedom from war on home soil have all exercised a beneficient effect on tuberculosis morbidity in the past.

Role of the State Health Department

The basic control of tuberculosis in the state of Minnesota is carried out essentially by the medical practitioners of the state. The impetus for continuing routine control measures and beginning new ones is given, however, by the state health department through its small but active Division of Tuberculosis.

The staff of the latter unit consists of: a director, qualified by holding the M.D. and M.P.H. degrees; a central office force of nine persons, mostly secretarial; a field service of three public health nurses; and four mobile unit x-ray technician-drivers.

Through his parent unit, which is the Section of Preventable Diseases, the director of the Division of Tuberculosis has access to the complete tuberculosis reports of the state. These reports include a life file, which lists all living reported cases of tuberculosis in the state back to the year 1913, a death report file and a visible county index file, which notes all those persons in the life file who are in need of medical or nursing supervision. The latter index is most useful, since the staff may, theoretically at least, follow the history of any active case in the state until a cure or death occurs. It is obvious, however, that such a file is far from complete because of the fact that in 1945, 15 per cent of tuberculosis deaths were first reported as cases of tuberculosis at the time of death.[6]

The usefulness of the county index file is dependent upon the co-operative response of practicing physicians and patients to the stimulating letters or visits from the state Division of Tuberculosis staff. Remote control supervision of those active cases in sanatoria can be safely left to the sanatoria; keeping track of the non-sanatorium or ex-sanatorium patient is a more difficult matter. The state office urges those counties that have a public health nurse in attendance to maintain a similar file, follow-ups to be carried out by the nurse.

If an individual carried on the county index file does not answer a query of the state office, and a possibility of infectiousness exists, the case is investigated by an epidemiologist from the state office.

An important work carried on by the Division of Tuberculosis is that of conducting mobile chest x-ray unit surveys throughout the state. There are six such units in Minnesota, three of which are owned by the state; and the remaining three are stationed in and owned by local voluntary societies in St. Louis, Ramsey and Hennepin counties, respectively. The cost of these 70 mm. serial x-ray mobile units, including truck and trailer, runs between 19,000 and 25,000 dollars each.

The surveys are done by county area and upon request of the individual counties. The three state-owned units are almost constantly in operation. Request for a survey is often initiated by the county medical society and must, in any event, be approved by the county medical society and the local tuberculosis sanatorium, if any. Final decision is made by the director of the

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Division of Tuberculosis.[7] To date, all but 15 counties have made requests for a survey. There is a backlog of forty counties to be surveyed.

As yet no county has been surveyed twice, with the exception of St. Louis county. A prerequisite to the conduct of any survey is that at least one public health nurse be available in the county to carry out the necessary follow-up work obviously mandatory for the success of the program. Such a prerequisite has been instrumental in causing many counties to engage the services of a public health nurse on a permanent basis. A further vital requirement to the success of the procedure is the wholehearted co-operation of the people of the area. In fact, in addition to furnishing personnel, educational propaganda effort, office space and material, voluntary agencies must bear the total cost of the local administrative expenses of such a venture, estimated to amount to 15 cents per film. Each film costs approximately 55 cents in figuring the operating expenses of a unit; 45 cents per film is paid by state and Federal funds allocated for this purpose. During the six months ending in June, 1948, five units (two county, three state) x-rayed 163,000 persons and discovered 1,000 reinfection (adult type) cases of tuberculosis, an incidence of .614 per cent. Seventy-five per cent of these cases were previously not known to health departments.[6]

Exact details of the mobile x-ray unit surveys, as carried out in Minnesota, have been adequately described by Mark[7] and will not be repeated here. However, a previously published[5] flow chart, prepared by the Division of Tuberculosis, is presented in Chart 1 as being of value in giving a comprehensive graphic view of a mobile unit survey.

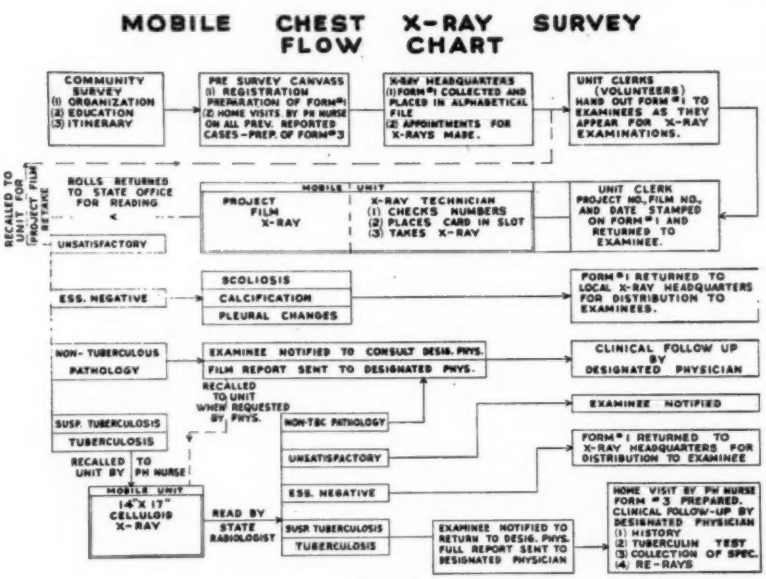

Chart I.

Effective as the mobile unit surveys are in bringing to light cases of tuberculosis, as is indicated in the six months' figures above, it is to be noted that the entire program is voluntary; and, as such, is subject to the defaults of recalcitrant free people. Further, it is impossible to screen more than 75 per cent to 94 per cent of a population of five years of age and above in any given area, during any one survey. Thus, even in surveyed areas, 6 per cent to 25 per cent of the population always escapes examination.[6] The question of time lag also arises. One survey unit can screen 2,000 chests per week on the average. Minnesota, with a population of 2,792,300, could, theoretically, be screened on a state-wide basis in one year by twenty-seven units. The presently available six units, assuming that all six could work constantly, would then require four years to x-ray the entire population. From an economic standpoint it would be impractical to depend upon mobile x-ray units for annual state-wide case finding surveys.

TABLE II. TUBERCULOSIS SANATORIA OF MINNESOTA, 1948

Sanatorium	*Location*	*Beds*	*Counties Served*	*Year Opened*
Minnesota State	Walker (Ah-Gwah-Ching)	355	43	1907
Nopeming	Duluth	275	1	1912
Otter Tail County	Battle Lake	48	1	1913
Ramsey County*	St. Paul	275	1	1914
Mineral Springs	Cannon Falls	100	8	1915
Glen Lake	Oak Terrace	639	1	1916
Sunnyrest	Crookston	60	2	1916
Lake Julia	Puposky	52	4	1916
Sand Beach	Lake Park	42	2	1916
Riverside	Granite Falls	48	4	1917
Buena-Vista	Wabasha	30	2	1917
South Western Minnesota	Worthington	54	10	1917
Oakland Park	Thief River Falls	65	4	1917
Fair Oaks Lodge	Wadena	36	2	1918
Deerwood	Deerwood	26	2	1918
Total		2105	87	

*Includes the Ramsey County Pavilion, a wing of Ancker General Hospital, St. Paul.

The additional twenty-one units, which would be required, alone, not including personnel salaries, would cost $525,000. At 55 cents per film, the cost per annum for the state's people would amount to $1,525,000.00. However, using the presently available machines, the cost on a five-year cyclic continuous mass survey basis would be about $300,000.00 per anum. Whether this latter sum would be balanced in cutting sanatoria operating costs, sickness and unemployment payments, et cetera, is an open question.

Tuberculosis Sanatoria in Minnesota

Since general hospitals in the State (two exceptions in St. Paul and Minneapolis) do not list beds for care of the tuberculous, only sanatoria can be discussed in relation to tuberculosis hospitalization. Minnesota has one state sanatorium, fourteen county sanatoria but no private sanatoria. Distribution of the 2,105 available sanatoria beds and the number of counties serviced by each institution is shown in Table II.

Surgical facilities for collapse therapy among the sanatoria are available only at Ah-Gwah-Ching, Glen Lake, Ramsey Pavilion, Mineral Springs and Nopeming. The smaller institutions all have pneumothorax and x-ray services, but patients must be sent to local general hospitals or to one of the large sanatoria for major surgical therapy. Sanatoria make an attempt to follow up all patients discharged from their confines.[13] There is no set pattern as to follow-up procedures. In some instances the institution has a public health nurse who actually visits the ex-inmate at his home. If the patient goes to a town outside of the county in which the sanatorium is located, public health personnel in the home area are invited to interest themselves in the case. As previously set forth, the Division of Tuberculosis keeps a live file on all cases of tuberculosis needing public health nursing or medical supervision, including discharged sanatoria patients. In all cases the physician of the discharged patient, if any, is notified by the institution of the patient's homecoming status.

It has been remarked by Smillie[12] that small sanatoria of less than 100 bed capacity are economically impractical. Although all but five of Minnesota's sanatoria fall within this category, it is unlikely that they will be closed if cognizance is taken of the cases of tuberculosis which are being discovered in the state in the amount of 0.6 to 1.5 per cent of all persons (.6 per cent rural to 1.5 per cent urban) examined by mobile survey units.[6] According to Mark,[7] 0.1 per cent of all persons so examined need hospitalization for observation or treatment. Thus it may be assumed that the state could, with six mobile survey units working, find up to 9,370 cases of tuberculosis in 1949, out of an anticipated 625,000 screenings, and have need to hospitalize some 625 of these. Such a requirement might continue annually until the entire population of the state has been screened, a matter of perhaps four or five years. During 1947 1,020 new cases, out of a total of 1,782 admissions, were admitted to all Minnesota sanatoria from all diagnostic sources. Should a continuous five year mass survey be put into effect in the state, it is estimated that total annual figures for sanatoria admission during those five years will rise by at least 30 per cent over the 1947 figure.

Tuberculin Surveys

With emphasis being placed on mass x-ray surveys in Minnesota,[2] the tuberculin survey is now considered primarily as a useful complementary case-finding method to be stressed until such time as mass x-ray surveys can be carried out to the optimum in degree and frequency. Initiative in stimulating tuberculin surveys is now in the hands of local health agencies, both official and voluntary. Most of the surveys are carried out on school children. The parents of positive reactors are notified and urged to have their children x-rayed. Local voluntary anti-tuberculosis agencies often finance such radiological follow-up

at no expense to the child's family. Although it is highly desirable that positive reactors to the Mantoux test receive chest x-rays, there is good cause to conduct the survey for statistical and epidemiological reasons. A tuberculin survey will give an index of the rate of infection in a community and is helpful in locating sources of infection. Duplicates of all survey records in Minnesota are forwarded to the Division of Tuberculosis.

The low incidence of sensitivity to tuberculin among the youth of the state is indicated in a report by E. A. Meyerding,[8] of the Minnesota Public Health Association, who gives the following figures for Mantoux test surveys in St. Paul high schools in 1947.

TABLE III—RESULTS OF MANTOUX TEST SURVEYS, 1947

Nine Junior and Senior High Schools, St. Paul, Minn.

Sex	Enrollment	No. Tested	Per Cent	No. Negative	Per Cent	No. Positive	Per Cent
Male	1,671	1,250	75.40	1,193	95.44	58	4.64
Female	1,709	1,457	85.25	1,385	95.05	71	4.87
Total	3,380	2,707	80.08	2,578	95.23	129	4.76

Tuberculin testing in the schools of the state seems assured for some time to come through the county accreditation plan,[9] standardized by the Minnesota Department of Health, the Minnesota State Medical Association and the Minnesota Public Health Association. The plan requires that for a county to be dubbed a "Tuberculosis Accredited County" by the Governor of the State, it must have a tuberculosis death rate of lower than 10.0 per 100,000 population per annum and a naturally occurring infection rate (i.e., not produced by BCG vaccination) among high school seniors of less than 15 per cent. The latter fact is determined by tuberculin surveys. To date, only fourteen counties, all rural, have been accredited.

The rather complex requirements of the American School Health Association for certifying schools that meet specified health standards call for an elaborate system of school tuberculin surveys.[1] The certificates given are graded from Class A through Class D and represent lessening degrees of health practices in relation to tuberculosis control carried on within the school. Some 634 schools in the state have been granted certificates to date.

BCG Vaccination

At the present BCG vaccination plays no major part in tuberculosis control in Minnesota. The views of Myers[11] prevail with health officials throughout the state. It is felt that within an area having such a low incidence of tuberculosis as does Minnesota that the effort and expense of carrying out a mass BCG vaccination program would not yield benefits comparable to cost. Again, were the major portion of the citizenry to become Mantoux positive through such a program, the use of tuberculin surveys as a valuable epidemiological tool would be lost. True, certain groups in the state, such as Mantoux negative physicians, nurses and medical students have been urged to submit to the vaccination before entering work in tuberculosis. Probably all Mantoux-negative Minnesota Indians should receive the vaccine. The epidemiological wisdom of permitting and encouraging the Mantoux-negative status within the general population must be judged at a later date.

The Role of the Physician

In the face of an almost totally absent official public health organization at county level in Minnesota, the State relies heavily upon its practicing physicians to carry out basic tuberculosis control, particularly in its case finding and case control aspects. The state health department, while prepared to give expert advice and administrative leadership and furnish certain technical aids, cannot hope to operate ubiquitously both as a field-case-finding and case-controlling agency. Since 1913[3] tuberculosis has been a reportable disease in Minnesota. This fact assures that each case first brought to light by a practicing physician will be registered at state level so that the Division of Tuberculosis can, in theory if not in practice, follow the patient's life progress even if the physician does not.

Faced with a freshly uncovered active, progressive case of tuberculosis, the physician is in a dilemma as well as is the patient. A very complex medico-social problem will now proceed to vex patient, doctor and organized society. Free laboratory facilities,[3] placed at the physician's disposal by the state, will soon inform him if the case is open and infectious. If it is so, immediate hospitalization and probably collapse therapy are indicated, in order to convert an open lesion to a closed one, protect the community and perhaps cure the patient. If the patient consents, the dilemma is solved for the doctor and the hospital or sanatorium takes over. If the patient refuses, the physician may call upon the local or state

health authorities to invoke Regulation 1503 of the state health laws and Section 144.49 of the Minnesota Statutes.[10] The former regulation states that "a person ill with tuberculosis who neglects or refuses to obey the instructions of the State Board of Health or the local health officer in matters relating to the protection of others against the disease shall be placed under quarantine in a suitable place . . . . until such time as the danger of infecting others no longer exists." This means that the tuberculous person can be forceably placed in a sanatorium, if necessary.

Occasionally, in Minnesota today, the physician will compromise and the patient will stay at home, supposedly in isolation. When this happens the physician has a constant and irritating responsibility to the community to fulfill, playing watchdog on the case. It is in this type of instance that a public health nurse often renders good service in checking on the patient at regular intervals and bringing in family and other contacts for tuberculin and x-ray screening. In general, however, the present attitude of physicians in Minnesota is that open cases of tuberculosis should go to an institution. Few patients are in Minnesota sanatoria by court order; nearly all go willingly. Exclusive of the three metropolitan areas of Minneapolis, Saint Paul and Duluth, it is estimated that there are presently only fifty open cases isolated at home in the state.[6] Public education on the benefits of sanatorium care in tuberculosis control has brought about this favorable situation.

All active cases of tuberculosis encountered in private practice involve a major change in the life of each patient, whether he stays at home or goes to an institution for care. Welfare and other social agencies are dependent on the physician for technical advice in rehabilitating him. Even inactive cases must be conscientiously followed for years by the practitioner. There is a tendency, however, for state and local health and welfare agencies to assume more and more of the technical and administrative supervision of all cases of tuberculosis in the state, with the practitioner serving as a point of reference. More and more frequently, sputums and gastric washings are examined at the state laboratories and x-rays are sent to county sanatoria to be read. It is the sanatoria who actually decide upon admission of cases, the desirability of collapse therapy, surgery, degree of healing, et cetera, and not the referring physician. The latter, realizing that the management of tuberculosis is a highly developed specialty, is usually willing to relinquish control of his cases.

The use of county sanatoria as out-patient clinics, with public health nurses as trouble shooters, is presently favored in Minnesota. It appears that the tuberculous citizen, a potential threat to the health of all, is being regarded as a ward of organized society, and eventually he will be routinely sought out and diagnosed by public health agencies as a matter of the public interest and treated essentially through public medical services.

Conflicts

Tuberculosis control in Minnesota is dominated by the State Department of Health, but several important phases of the work are under the direct supervision of other governmental agencies. The management of the tuberculous within state institutions is the responsibility of the State Department of Institutions. Thus, all criminals and insane who develop the disease remain outside of the jurisdiction of the Division of Tuberculosis. All tuberculosis sanatoria, state and county, are operated under the State Department of Welfare. Simplicity of administration and centralization of control, features usually desirable in institutional operation, would indicate the combination of these functions under the State Department of Health.

Conflicts which arise between voluntary associations, such as the National Tuberculosis Association and its state and county sub-organizations and official agencies, apparently occur only occasionally on a personality basis. At policy level, and at operating level, the voluntary agencies are at the service of the official governmental health units, ready to furnish funds, material, transportation, personnel and enthusiasm in exchange for technical and administrative leadership in a common cause.[8]

Summary

Minnesota compares very favorably with the United States as to tuberculosis mortality and is developing an effective state directed case finding program through the medium of mobile unit chest x-ray surveys. Tuberculin surveys play an important role in the case finding program but have been relegated to voluntary health agencies for realization. BCG vaccination is not favored

(Continued on Page 379)

A SURVEY OF VALVULAR HEART DISEASE IN 1,000 CASES OF PULMONARY TUBERCULOSIS

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THERE is a popular belief that individuals suffering from mitral stenosis are less liable to acquire pulmonary tuberculosis than other individuals; and it is believed further, that individuals with pulmonary stenosis are more susceptible to tuberculosis than other individuals. Rokitansky expressed the former view when he wrote that the chronic passive congestion of the lungs resulting from heart disease usually excludes development of tuberculosis in the lung. Following this expression is the concept that mitral stenosis protected against pulmonary tuberculosis passed on through the literature; and, even as recently as 1944, Paul White stated that pulmonary tuberculosis is rare in the presence of mitral stenosis. He further stated that chronic pulmonary congestion resulting from mitral stenosis makes it difficult for the tubercle bacillus to gain a foothold. This concept that pulmonary congestion protects against the development of tuberculosis has been refuted by workers such as Calthrop, Hawes, Buckingham and Hoffman, Bishop and Babey, Stinson, Kremer and Shapiro, Roberts, Lisa, and Kellner. In general these observers have pointed out that the incidence of mitral stenosis in people suffering from pulmonary tuberculosis is about the same as its incidence in the non-tuberculous population. It is also their opinion that pulmonary tuberculosis is not more common in individuals with pulmonary stenosis than it is in the general population at large.

We became interested in this controversy and, as a result, reviewed the incidence at autopsy of chronic valvular heart disease in 1,000 individuals in whom tuberculosis was found. These cases represent the total number of individuals who have either died or suffered from tuberculosis in a series of 10,000 necropsies performed at the Ancker Hospital by Dr. John F. Noble from 1925 to 1948. Only those individuals who were proven to have had tuberculosis at some time are included in the series. Only those patients, too, in whom valvular heart disease could be demonstrated at the autopsy table are included in the series. It was found that there was some degree of heart involvement in 17.7 per cent of the thousand cases of pulmonary tuberculosis that were reviewed to date. The mitral valve was involved in 11.1 per cent and a frank advanced mitral stenosis in 0.5 per cent. The aortic valve was involved in 9.7 per cent and the tricuspid valve in 0.7 per cent. The pulmonary valve showed a slight change in about 0.5 per cent of the cases. Of the ninety-seven patients with aortic valve defects, the greater number occurred in males; while mitral lesions predominated in females. The average age of the individuals in the survey was sixty-five years; the average age of those with aortic valve defects was sixty-eight years; and those with mitral valve lesions 62.7 years.

The chief causes of death in these 1,000 cases of pulmonary tuberculosis were: tuberculosis in 49.3 per cent and heart disease in 8.2 per cent. In the remainder, death occurred from various other illnesses. The incidence of valvular heart disease in this series of cases of 17.7 per cent compares with a reported high of 29 per cent and a low of 0.24 per cent by other authors. The relatively high figure in this series may be accounted for by the fact that it includes those cases in which acute terminal valvular endocarditis was present at the time of the autopsy. It is also recognized that the incidence of valvular heart disease is usually higher in an autopsy series of patients than in series bases on clinical diagnosis. By far the greater number of lesions involved the mitral and aortic valves; the tricuspid and pulmonary valves, as was to be expected, being seldom involved.

As regards the statement that the incidence of pulmonary tuberculosis is abnormally high in individuals with pulmonary stenosis, it is interesting to note that no true pulmonary stenotic valve defect occurred in this group. It is also interesting that the rate of occurrence of aortic valve defects is essentially the same as that reported by Doctors Clawson and Bell.

The incidence of frank mitral stenosis in our series falls well within the range of the rates

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published by others for patients suffering from tuberculosis and also is about the same as that in the non-tuberculous population of this area. It is our belief that evidence is accumulating to indicate that the incidence of mitral stenosis in tuberculosis patients is about the same as in the non-tuberculous group in the same area. Because of this we feel that the old dictum that pulmonary congestion incidental to heart disease protects the patient from tuberculosis is fallacious.

Summary

The incidence of valvular heart disease at Ancker Hospital in 1,000 patients dying from or having suffered from tuberculosis is 17.7 per cent.

The aortic valve defects predominated in the male, and mitral defects predominated in the female.

Frank advanced mitral stenosis occurred in 0.5 per cent of the patients with pulmonary tuberculosis, and this incidence is essentially the same as that which occurs in this area among non-tuberculous patients.

It is recognized that the number of cases studied is statistically insignificant, but this study seems to indicate that the theory that mitral stenosis protects against pulmonary tuberculosis is probably incorrect.

The authors are indebted to Dr. John F. Noble for his suggestions and criticisms.

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THE CONTROL OF TUBERCULOSIS IN MINNESOTA

(Continued from Page 377)

except for certain small, special population groups. At the present, Minnesota is well supplied with sanatoria beds (3.9 per annual death), but anticipates a need for more beds for at least a five year period during and after the mobile unit x-ray surveys of the entire population are completed. The private practitioner is still the key agent within the state for diagnosis plus treatment and follow-up of the tuberculous, but his role, eventually will probably be assumed by public health and medical services. The chief deterrents preventing official state health agencies from assuming complete control of the tuberculous are a serious lack of trained official personnel, especially public health nurses, organized at county level to carry out follow-up procedures adequately, and a lack of administrative control over certain state institutions and county sanatoria that shelter tuberculous patients.

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POSITIONS OF THE PATIENT—THEIR EFFECT ON SPINAL ANESTHESIA

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WHILE changes in the position of the patient are important everywhere in surgery, they are particularly so in spinal block. Incorrect positioning of the patient can mean (1) failure to produce proper anesthesia, (2) death of the patient, (3) permanent damage, (4) nerve injuries, and (5) restlessness, which may simulate unsuccessful or waning spinal block.

The effects produced by the various positions in which the patient may be placed are (1) those of gravity, in which the levels of (a) the head and feet, (b) the left and right side, or (c) the front and back may be different, and (2) those where the levels of the different parts of the body are not changed but the interrelationships of the various parts are themselves altered. The following is a list of the positions most commonly used in anesthesia and in surgery.

1. Dorsal, or supine: lying on back.
2. Dorsal recumbent: supine, legs flexed and rotated out.
3. Elliot: supine, support under small of back (for operation on the gall bladder).
4. Lateral recumbent: on side, upper thigh and knee drawn up.
5. Kraske, Depage: prone, with pelvis elevated.
6. Lithotomy, or dorsosacral: on back, legs and thighs flexed.
7. Prone: face down.
8. Sitting.
9. Trendelenburg. The Trendelenburg position is distinguished from the head down position, as it includes (1) 45 degrees of head-lowering, (2) flexion of the knees.
10. Scultetus, head-down: on inclined plane, with head down.
11. Fowler, reversed Trendelenburg: head up.
12. Unilateral: lying on side.
13. Kidney: unilateral, with lateral flexion.
14. Unusual positions, for those who cannot assume standard positions (arthritis, ankylosis, spinal injuries, previous operations).

What the surgeon wants to know:

1. What position should be used for giving the spinal anesthetic?

2. In what position should the patient be placed immediately after giving the spinal anesthetic?

3. How soon may the head be lowered?

4. What position should be used after operation?

5. How long should the patient be kept in bed?

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Causes of Death from Spinal Block

Shock.—

1. White sympathetic rami theory. According to this theory, vasoconstrictor impulses are carried in the white rami of the sympathetic nervous system. These impulses stream upward into the lowest part of the cord and downward in the uppermost part, so that a block up to the upper thoracic region effectually blocks such fibers running to all parts of the body. If these fibers are blocked in performing subarachnoid nerve-root block, it is to be expected that spinal anesthesia will be associated with a fall in blood pressure and that higher levels of anesthesia will be attended by more profound lowering of the blood pressure.

2. Adrenal theory. This theory, advanced by Pitkin, asserts that the fall in blood pressure is brought about by a paralysis of adrenin secretion caused by paralysis of the sympathetic nervous system. According to this theory, spinal block up to the sixth thoracic segment paralyzes the autonomic nerves to the adrenal glands and thereby brings about a blood pressure fall.

3. Some cases are not explained by either theory.

Babcock states:

"If the lower eleven dorsal and the first three lumbar roots are completely blocked, every blood vessel in the body, from the vertex to the toes, is completely relaxed; the heart rate falls to 40, 50, or 60; no pulse may be felt at the wrist; and while there may be a soft, faint pulse in the carotids, with a completely relaxed vascular system and a partially relaxed muscular system, the blood lies in the dependent portions of the body as in a cadaver. The skin is pale, and incisions through nondependent portions of the body are dry and bloodless."

Respiratory Paralysis.—Paralysis of the intercostal muscles occurs commonly in spinal block, as it does in inhalational anesthesia. It must be remembered that the thoracic nerves which supply the skin and the muscles of the anterior abdominal wall also innervate the intercostal muscles. If skin anesthesia is desired up to the nipple line,

which would correspond to the fourth thoracic segment, motor block, which may lag some two segments behind, will surely reach as high as the sixth thoracic segment. Thus the lower six thoracic nerves on each side and the lower six intercostal muscles on either side are blocked and half of the musculature of the chest wall has been paralyzed. It is obvious, therefore, that (1) spinal block is commonly associated with some degree of respiratory depression and (2) higher levels of spinal anesthesia are associated with more severe degrees of respiratory depression. When the anesthesia has reached the first thoracic segment, all intercostal muscles are paralyzed. The patient in this situation carries on respiration with the diaphragm alone. Breathing will be of the paradoxical or negative or rocking-chair type. The chest wall, instead of rising during inspiration, will fall here and rise during expiration. Should the spinal block reach as high as the fourth cervical segment, the phrenic nerve, which is derived from the third, fourth (chiefly), and fifth cervical segments, will be paralyzed on either side, and respirations will cease.

Anatomy

The two most marked curves in the spinal column are opposite the third lumbar (anterior) and fifth thoracic (posterior) vertebrae. In the lithotomy position, the lumbar curve is obliterated. In the lateral position, the influence of the spinal curves is eliminated.

Variations in position, including those involving gravity effect and those involving alteration in interrelationships of various parts of the body, produce, in spinal block, alterations in (1) the cerebrospinal fluid, (2) circulation, (3) respirations, and bring about the following clinical effects:

Height of Anesthesia.—This is a function of the spreading cephalad of the anesthetizing solution injected. If skin anesthesia is desired up to the nipple line, corresponding to the fourth thoracic segment; and lumbar puncture is performed at the second lumbar interspace, a spread upward of ten spinal segments is required. Specific gravities of the various fluids and solutions involved are listed here for this purpose:

Cerebrospinal fluid: 1.001 to 1.009, average 1.007
Procaine, 10 per cent in water: 1.015 to 1.018
Metycaine, 10 per cent in water: 1.0145
Nupercaine, 0.5 per cent in saline: 1.0037
Pontocaine (tetracaine), 1 per cent in saline: 1.0065 to 1.0068; 0.5 per cent in saline: 1.0069
Ten per cent dextrose solutions: 1.030

Duration of Anesthesia.—For a given volume and total dose of anesthetizing solution, a higher level of anesthesia will obviously be associated with a shortened duration of anesthesia. Where a small dose (and a prolonged duration of anesthesia) is desired, for the production of a low anesthesia, the solution should be confined to the lower segments during the period immediately following its injection, to prevent it from spreading upward and from being wasted in unnecessarily anesthetizing higher nerve roots not involved in the surgical procedure contemplated.

Symmetry of Anesthesia.—If the spinal block has been performed in a unilateral position, and the patient has been kept in that position for five or ten minutes following the block, the anesthesia will be found to be asymmetrical. If the solution is heavier than spinal fluid, the level of anesthesia will be higher on the lower side; for a lighter solution, the anesthesia will be higher on the upper side.

Hypotension.—It has been shown above that, in general, higher levels of anesthesia, brought about by gravity effects produced by head-raising or head-lowering, are associated with more profound lowering of the blood pressure.

Respiratory Depression.—Depression of the respirations, as described above, is directly proportional to the spread upward through the thoracic spinal segments.

Nausea and Vomiting.—These, too, are more commonly seen in higher levels of spinal anesthesia. Hypotension associated with high anesthesia has been stated to be a cause of nausea and vomiting. Relaxation of the sphincters, often followed by the entrance of bile into the stomach, may be a factor in bringing about this complication.

Headache.—This symptom may be due to hypotension also. Leaking of the cerebrospinal fluid through the lumbar puncture is most generally asserted to be the cause of postspinal headache. The incidence of headache following spinal puncture or spinal block is fairly high and probably amounts to about 5 per cent. The headache does

not appear immediately following the puncture or block, but occurs typically when the patient sits up; it is usually severe and is relieved by lying down.

Comfort of the Patient.—It is essential, since the patient remains conscious during the entire operative procedure, that he be made as comfortable as possible. Often, during the latter part of the surgical procedure, he may become uncomfortable and markedly apprehensive. This is often interpreted as being due to a waning of the spinal block. The diagnosis can usually be made if it is noted that his pain does not correspond accurately to the surgeon's manipulations, and if the patient is unable to move his feet.

Convenience of the Surgeon (operating conditions).

The following techniques involve the use of gravity control: Barker (glucose), Babcock (heavy or light solutions), Pitkin (light solution, tiltometer), Sise (both), Labat (no vasoconstrictors), Maxson, Vehrs (gravity effect used only after fixation of drug), Jones (light, prone, to soak posterior roots), Wilson (light, sitting position), Sise (pontocaine-glucose).

Positions

Trendelenburg and Head-Down Positions.—Koster and Labat both insisted on the head-down position immediately after spinal block, to guard against cerebral anemia. Labat maintained this position for three hours after operation. Vehrs used the Trendelenburg position early but not immediately following spinal block.

Advantages: (1) it aids in bringing blood to the brain and thus insures the best possible blood supply to the vital medullary centers, (2) it aids in bringing blood from the abdomen to the heart, (3) it facilitates gravity convection. Other factors involved in spreading the solution are dispersion (mixing due to the actual injecting) and diffusion (gradual mixing, because of difference in concentrations).

Others (Grodinsky and Baker) object to the use of the head-down position as: (1) the anesthetic gravitates toward the higher centers or may simply become high; (2) the duration of anesthesia is shortened; (3) the patient is uncomfortable (this position should not be maintained too long following operation as most patients dislike it intensely); (4) the patient is in a physiologically abnormal position; (5) the respirations are embarrassed; the diaphragm and subphrenic viscera assume a more cephalad position and the patient is required to lift the weight of the abdominal viscera with each inspiratory effort; (6) it increases venous congestion in the head and neck. These workers and others use the Trendelenburg position only when there is vasomotor collapse and cerebral anemia.

Greenberg, Visscher, et al, have shown that ruminants held on their backs for over a few hours will die of pulmonary congestion, alveolar hemorrhage, and interstitial edema.[1]

When the Trendelenburg position is assumed soon after injection, the head and neck should be raised, to prevent the anesthetizing solution from affecting the higher centers. In the head-down position, the effect of gravity is not to move the drug in high concentration to the most dependent parts but to spread it out in ever-decreasing concentration over a distance proportional to the volume of drug injected.

Fowler Position.—This is a comfortable position. Slight Fowler position produces, in gallbladder or gastric surgery under spinal anesthesia, a striking falling away of the abdominal viscera from the field of operation.

Prone Position.—Breathing is difficult in this position, as it is necessary for the patient to lift a considerable part of his body weight with each inspiratory effort. Severe fall in blood pressure may be associated with the prone position, as is often shown by a return to normal on restoring the patient to a supine position. As both falls in blood pressure and respiratory depression are commonly seen when the patient has been placed in the prone position, both of these may be accentuated where spinal block, known to produce these complications of itself, has been performed.

Kraske Position.—Hypotension occurs commonly following the use of the Kraske position. It is often advantageous, for hemorrhoidectomy and for repair of rectal fissure, to employ caudal and sacral block.

Lithotomy Position.—Breathing is slightly difficult in this position, but for low rectal work this is probably superior to the Kraske position.

Lateral Position.—Breathing may be difficult in the lateral position. There is compression of the lower lung and some slight gravity resistance on inspiration. This position is used particularly where an asymmetrical or unilateral anesthesia is desired. The advantages of unilateral anesthesia are: (1) only the affected part is anesthetized, (2) a long anesthesia can be obtained, and (3) where the anesthesia is largely one-sided, there may be very little fall of blood pressure (in this regard, it may be recalled that first stage sympathectomy for hypertension is followed by no fall in blood pressure), (4) there is probably less respiratory depression where the anesthesia is largely one-sided.

Disadvantages: (1) the production of a one-sided anesthesia is uncertain, (2) somewhat more positioning is needed for this procedure, and (3) where the patient is to be operated in the supine position, he must be kept on his side for a period that is longer than usually required.

The dangers of spinal shock are its effects on the brain and heart. The warnings of cerebral anemia are: (1) rising pulse rate (the parallelism between pulse rate and blood pressure, typical of spinal block, is here broken), (2) increasing fall in blood pressure, (3) increasing pallor, and (4) possibly increased abdominal pulsations.

Injection

Sitting.—This is the easiest position for the performing of spinal block, as (1) the median plane is well defined, and (2) the pressure on the cerebrospinal fluid is greater, so that the fluid will drip freely from the needle when it has been correctly placed. When lumbar puncture is performed in the lateral position, the fluid is under very little pressure and may only ooze from the hub of the needle. The sitting position is used for low anesthesia ("sitting-bull" spinal; for work on the anus and external genitals). This position is used commonly where heavy solutions are employed. It is also used with light solutions, employing the Wilson technique. When spinal block is performed in the sitting position, it is of distinct advantage to put the patient's feet on a stool.

Lateral.—This position can be used for either light or heavy solutions. The patient is placed on his side when a high level of anesthesia is to be obtained. In this position the median crease sags and it is necessary to determine the location of the needle point in three dimensions. The anesthetist will need to find the median plane in addition to directing the point of needle cephalad or caudad. In this position, as has been mentioned above, the cerebrospinal fluid pressure is low. If the patient is to be operated on in the lateral position, the affected side is up, a light solution is used, and the patient is not turned after spinal block has been performed; or the affected side may be kept down and a heavy solution used and the patient turned to the other side when the anesthetic level is high enough. If the operation is to be done with the patient on his back, the affected side is down for heavy solutions, up for light. It will be found helpful, particularly where there is considerable sag in the median crease, to place a pillow under the lower back, so as to straighten out the spinal column.

General.—No wrestling holds should be used, as they tend only to increase the tonus of the skeletal muscles. The patient should be instructed, whether in the lateral or sitting position, to attempt to bring his nose and his knees together.

After injection, one should wait five to ten minutes before turning the patient.

Heavy Solution.—(1) For low anesthesia, the patient is kept in a sitting position for at least two minutes. (2) For anesthesia to the umbilicus, the table is kept flat for ten minutes, then the head may be lowered. (3) For anesthesia to the costal margin, the head-down position at 10 to 15 degrees is maintained until the anesthesia is high enough; a level position is then maintained for ten minutes, then Trendelenburg position if desired.

Light Solution.—(1) For low anesthesia: lateral or flat position, then Trendelenburg. (2) For anesthesia to the umbilicus, flat position, very slight head lowering. (3) For anesthesia to the ribs: 10 to 15 degrees Fowler position until high enough, then flat for ten minutes.

Isobaric Solution.—Theoretically, any position may be used. The effects are uncertain, as the solution may actually be heavier or lighter than the patient's spinal fluid. Isobaricity is probably not desirable, as the anesthetizing solution cannot be made to spread far. Isobaricity probably is of no advantage even though the claim made for it be true. A distinct danger may be presented, as a

(Continued on Page 389)

ADVANTAGES OF A SEPARATE NURSERY FOR PREMATURE INFANTS

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ANY LIVE-BORN child weighing less than 2,500 grams is considered premature, regardless of the period of gestation. All live-born premature infants should be included in this group; evidence of life being heart beat or breathing.[7]

Prematurity takes a higher toll of infant life than any other pediatric condition and is one of the ten leading causes of death. It caused 33,120 infant deaths during 1944. It is given as the cause of death in 47 per cent of all neo-natal cases. According to Potter, it is the direct cause of 25 per cent of all deaths under one year of age and is a contributing factor in another 25 per cent.[5]

Why is prematurity itself a cause of death? The immediate reason is the inability of the premature organism to support life. The lung of the premature may not be able to carry on adequate oxygen exchange for survival. The nearer the infant is to term, the larger is the capillary bed in contact with the alveolar lumen. The fetal alveoli are lined with cuboidal epithelium and, as the fetus grows, the capillaries push between the cells so that they are in contact with the alveolar spaces. If the capillary bed is inadequate, the fetus cannot survive.

A second factor in premature mortality is the incomplete development of the kidneys. The glomerular development continues until the thirty-sixth week of intrauterine life. Tublar development is incomplete at term.

The gastro-intestinal tract of a premature is less able to digest food than is that of the full-term infant. The digestive glands are smaller and fewer in number, but, on the whole, the digestive system is relatively more mature than either the lung or kidney.[6]

Flax[3] gives the causes of death as shown in Table II.

TABLE I. COMPARISON OF MORTALITY RATES BY STANDARD WEIGHT GROUPS IN AUTHOR'S SERIES

Before and after establishment of separate nursery for premature. Hess' figures from Chicago.

		1000 Gms.	1000-1250 Gms.	1250-1500 Gms.	1500-2000 Gms.	2000-2500 Gms.	Total
1940-45	Cases	12	7	6	30	41	96
	Died	12	5	5	9	2	33
	Mortality	100%	71%	83%	39%	5%	34.3%
1945-47	Cases	13	8	12	53	90	176
	Died	12	7	2	7	3	31
	Mortality	92%	88%	16%	13%	3%	17.6%
Hess	Cases	247	286	465	1391	1359	3748
	Mortality	87%	62%	43%	22%	11%	27 %

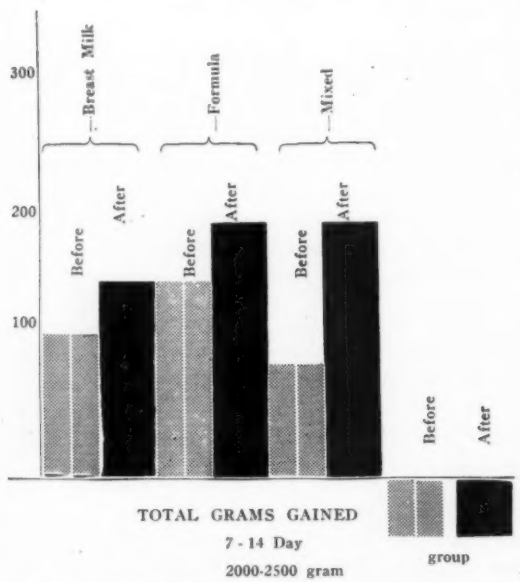

Fig. 1. Amount gained between seventh and fourteenth days in infants on breast milk, artificial food and mixed feedings.

TABLE II. CAUSES OF DEATH

	Per Cent
1. Atelectasis	24.2
2. Prematurity	22.8
3. Bronchopneumonia	15.07
4. Diarrhea	12.44
5. Cranial Injury	11.05
6. Syphilis	4.61
7. Other causes	10.44

Dr. Arey is with the Department of Pediatrics, St. Barnabas Hospital, Minneapolis, and Dr. Christiansen is a Teaching Fellow, Department of Pediatrics, University of Minnesota, Minneapolis.

TABLE III. DURATION OF HOSPITAL STAY BEFORE AND AFTER ESTABLISHMENT OF SEPARATE NURSERY.

		Below 1000	1000-1250	1250-1500	1500-2000	2000--2500
Before	Cases	0	2	1	19	38
	Days	—	43	41	36.3	18.9
After	Cases	1	1	10	46	85
	Days	74	76	53.9	32.3	21

Dunham[6] groups the causes as:

1. Prematurity, especially in the low birth weight group.
2. Infection.
3. Intracranial hemorrhage.
4. Congenital defects.

In the first forty-eight hours of life, the main causes of death are asphyxia, atelectasis, and intracranial hemorrhage. After this time, the chief cause is acute infection, especially bronchopneumonia.

TABLE IV. MORBIDITY FIGURES BEFORE AND AFTER ESTABLISHMENT OF SEPARATE NURSERY.

No. Cases Before	No. Cases After	Diseases
1	—	G. C. Ophthalmitis
1	—	Pemphigus Neonatorum
1	6	Upper Respiratory Infection
—	6	Diarrhea
—	2	Pneumonia
—	1	Atelectasis

TABLE V. CAUSES OF DEATH BEFORE AND AFTER ESTABLISHMENT OF SEPARATE NURSERY.

	Prematurity	Atelectasis	Broncho-pneumonia	Intracranial Hemorrhage	Congenital Anomalies	Diarrhea	Maternal Complications	Intra-abdominal Hemorrhage
Before	33	11	1	5	2	0	5	1
After	31	5	3	2	4	2	7	0

Arey[1] was able to demonstrate an adequate cause of death in twenty-one of twenty-two consecutive autopsies on prematures.

There are two approaches in attacking the problem of prematurity; first, the prevention of premature births; and second, improved methods of caring for the infant born before term. In this paper, we are concerned only with the second group of factors.

Flax[3] attributes a reduction of premature mortality at Charity Hospital, New Orleans, to the following factors:

1. Segregation of prematures from the general nursery.
2. Care by graduate nurses.
3. Use of breast milk for all infants under three pounds.
4. Use of oxygen routinely.
5. Close co-operation between the obstetrical and pediatric groups.

At St. Barnabas Hospital, Minneapolis, from January, 1940, through October, 1947, there were 10,669 deliveries with 272, or 2.5 per cent premature births.

In the early part of 1945, a separate premature nursery was established. This consisted of two rooms with an adjoining utility room; one room for clean and one for isolation cases. This set-up was entirely separate from the newborn nursery, being on another floor. It was manned by a separate staff. A graduate nurse was on duty twenty-four hours daily. Prior to this time, the prematures were cared for in the newborn nursery. These infants were supervised by the general medical staff of the hospital, the larger group being cared for by men engaged in general practice. There was no attempt to follow a standardized routine, each man using his own methods.

Before the nursery opened there were 99 prematures with a mortality of 34.3 per cent. From February, 1945, through October, 1947, there were 176 premature infants born with a mortality of 17.6 per cent, or about a 50 per cent reduction in mortality. When these figures are broken down into standard weight groups, we find that the majority of improvement has come in the weight groups from 1,250-2,500 grams.

Hess' figures are given for comparison (Table I).

An attempt was made to determine any advantage in feeding breast milk or any special type of artificial feeding. No significant difference could be noted. There was, however, a great increase in rate of gain when the prematures were cared for in a separate nursery (Fig. 1).

The hospital stay before and after the establishment of the nursery was compared. There was no apparent advantage noted (Table III).

(Continued on Page 387)

TRACTOR DRIVERS' COMPLAINTS

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TECHNOLOGICAL developments in recent decades have added to the repertoire of medical syndromes. Among the more notable are caisson disease, aerotitis and aerosinusitis, asbestosis, and so on.

During several years of rural practice, the writer observed that even so innocuous-appearing an activity as driving a farm tractor can produce distressing symptoms. The most common was lower backache, or "tractor back," as it is called in some localities. From this rather obvious sequel, the gamut of complaints ranged through neck stiffness and extremity pain, to digestive upsets, frequent stools, heartburn, urinary frequency, and dizziness. Some of these were not easily traceable to tractor-driving. In fact, the writer was put to considerable effort on several occasions before he was able to exclude other maladies, and, upon eliciting a history of long hours on the tractor, assure himself of the correct diagnosis. Additional proof was obtained when the symptoms promptly subsided with cessation of tractor work. In a few cases it was deemed necessary to x-ray the gastrointestinal and even the genitourinary tracts, to exclude organic lesions.

Mechanism of Injury

The complaints occurred primarily during the seasons of "heavy" tractor work, like plowing and discing, and when the ground was hard and rough. In the spring, the farmers suddenly change from the comparative inactivity of winter to the hustle and bustle of preparing the fields. Their muscles are temporarily unaccustomed to the punishment they must undergo. The tractor lurches to and fro and from side to side in a modified version of a bucking broncho. Overambitious farmers, aware that their machines never require rest, drive themselves through long days of twelve to eighteen hours. Even the hardiest bodies cannot withstand this kind of strain for long.

The average tractor is equipped with a simple molded steel seat, shaped like the scoop of a grain shovel. This seat is attached to the tractor frame by a single-leaf steel bar-spring, which permits only limited flexibility. These seats are notoriously uncomfortable. Many a farmer has discarded this standard seat and equipped his tractor with a "hydraulic seat." To my knowledge, only one tractor manufacturer is featuring this type of seat as standard equipment.* Several farmers have informed me that the "hydraulic seat" helps eliminate the violent up-and-down bumps, but does nothing to the side-to-side lurches which are even more troublesome. So far, tractors have not had "knee-action" wheels. However, a certain tractor manufacturer† has recently come out with "knee-action" front wheels, which will certainly absorb some of these lurches, although the major side-to-side lurches undoubtedly come from the rear wheels. Most farmers have discovered their own method of minimizing the bumps. They stand on the tractor chassis with slightly flexed knees, through which the shocks are absorbed.

The patients interviewed agreed readily that their speed, especially over rough ground, contributed directly to their symptoms. Rubber tires, make of tractor, age, height and weight of the driver, bore no relationship to complaints. Apparently the whole process is one of violent continuous twisting and straining of the back muscles and ligaments, with concussion of the abdominal viscera in certain cases. This concussion seems the most likely explanation for the loss of appetite, digestive upsets, epigastric soreness, flatulence, and diarrhea mentioned in Table I. Sometimes the abdominal muscles will actually be tender to the examiner's touch. The sore stiff neck which some patients complained of was due to twisting around frequently, to observe the plow or other implement being pulled by the tractor.

Treatment

The "hydraulic" tractor seat is partially successful in easing the shocks and jars of tractor driving. If the interest of agricultural manufacturers could be aroused, it might be possible through research to develop a seat which would eliminate all the bumps and lurches. It seems to me that this would be the ideal solution of the problem. In the meantime, the following measures are useful in preventing symptoms.

1. Shorter work periods on the tractor, especially at the beginning of spring work.

*Massey-Harris Company, Racine, Wisconsin.
†John Deere Farm Equipment Company, Waterloo, Iowa.

TABLE I.

Patient	Age	Weight	Height	Make of Tractors	Type of Seat	Symptoms
R. M.	23	140	5'8"	Allis Chalmers	Spring bar Later hydraulic	Abdomen shaken up. Digestive upset. Anorexia
P. F.	50	158	5'8"	Farmall	Hydraulic	Lower backache. Stiffness
F. E.	55	180	5'10"	Farmall	Spring bar	Dizziness. Pain in right arm and leg
C. L.	38	165	6'3"	Allis Chalmers	Spring bar Later hydraulic	Soreness in epigastrium. Gastrointestinal x-rays negative
H. H.	39	165	5'9"	Allis Chalmers	Spring bar	Low backache
H. D.	30	173	5'11"	Oliver	Coil spring	Stomach shaken up. Slight backache
L. W.	43	162	6'1"	McCormick Deering	Coil spring	Low backache. Pain in right flank. Urinary frequency. Kidney x-rays negative
H. K.	38	175	6'	John Deere	Spring bar	Lower backache. Stiffness
H. F.	67	130	5'6"	Farmall	Spring bar	Pain in small epigastric hernia
E. C.	36	170	5'8"	Allis Chalmers & Farmall	Hydraulic Spring bar	Stomach shaken up. Flatulence
S. W.	41	212	5'11"	Mpls. Moline	Spring bar	Sore stomach
M. J.	33	165	6'	Farmall	Hydraulic	Stomach cramps and frequent stools
H. N.	56	191	5'11"	John Deere	Spring bar	Severe low backache
O. L.	46	135	5'8"	McCormick Deering	Spring bar Later hydraulic	Pain left side abdomen. Better after hydraulic seat
J. W.	48	155	5'8"	Farmall	Spring bar	Pain in hips. Pain and stiffness in neck
L. C. Jr.	20	135	5'8"	John Deere & Farmall	Spring bar Spring bar	Backache. Headache
R. B.	28	135	5'10"	Caterpillar	Coil spring	Stiff neck. Stomach cramps. Gastro- intestinal x-rays negative
L. C. Sr.	46	145	5'9"	John Deere & Farmall	Spring bar Spring bar	Low backache
P. K.	48	160	5'6"	Allis Chalmers	Spring bar	Aching arms. Stiffness and pain in neck
M. N.	31	200	6'1"	Farmall	Hydraulic	Heartburn. Stomach shaken up. Gastro- intestinal x-rays negative
S. P.	66	175	5'8"	Farmall	Spring bar	Severe pain, soreness across upper abdomen
H. F.	43	175	5'11"	John Deere	Spring bar	Low backache
B. B.	21	150	5'10"	Farmall	Spring bar	Heartburn. Stomach pain

TABLE II. COMPLAINTS IN 23 PATIENTS

Complaint	No. of times Encountered
Backache	10
Indigestion (heartburn, vomiting, anorexia, cramps, loose stools)	7
Abdominal soreness	5
Sore, stiff neck	3
Pain in extremities	2
Other symptoms (headache; dizziness; urinary freq.)	3

2. Reduced speed over rough ground.

3. Standing on the tractor chassis, with knees slightly flexed, to absorb shock.

4. Abdominal and/or back supports for selected cases.

The treatment of symptoms is on an empirical basis. Cessation of driving for indefinite periods is, of course, of prior importance.

Summary

An enumeration of the symptoms suffered by a small group of farmers directly attributable to tractor-driving is made. The mechanism of production of these symptoms is discussed, as is their prevention and treatment. The most important point is recognition of the more unusual manifestation of this condition, so that correct advice and treatment will be instituted.

ADVANTAGES OF A SEPARATE NURSERY FOR PREMATURE INFANTS

(Continued from Page 385)

Morbidity—Statistics seem to favor the series before the separate nursery was established, but a check of the records before 1945 would indicate that the difference was probably due to more adequate records since opening the separate unit (Table IV).

Causes of Death—The number is not large enough to be statistically significant, but it is encouraging to note that there is still room for improvement in the theoretically preventable causes of death (Table V).

Conclusion

1. A comparison of results before and after the establishment of a separate premature nursery revealed a lowering of premature mortality by approximately one-half.

2. Care by interested graduate nurses in a separate nursery, is a most important factor in lowering the death rate among premature infants.

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ST. CLOUD CANCER DETECTION CLINIC

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THE INTEREST shown in the type of Cancer Detection Clinics held in Fergus Falls over a year ago' and again, more recently, in St. Cloud, leads to this report of some of the reproducible details of the latter. The Stearns-Benton County Medical Society set the date of the clinic for a Saturday; decided to use a high school for the place of the examinations; limited the number of examinees to 300 adults, without specification as to status of their health; and appointed a committee of three to take care of all details. There was to be no charge and all services were to be free except for traveling expenses of five specialists who were to be brought in from the Twin Cities to help the volunteer local physicians. All unavoidable expenses were to be paid by the Minnesota Health Department and the Minnesota Branch of the American Cancer Society.

Registration

The American Legion Auxiliary was given the responsibility of registration of examinees in St. Cloud and out-lying areas. Ten phones on two phone numbers were continuously busy until the quota of 300 appointments was reached, this occurring by noon of the second day. And the phones continued ringing for the next two weeks prior to the clinic day in spite of newspaper and radio announcements that the registration was filled.

A systematic card system of the examinees was arranged according to time of appointments (9:00 A.M., 10:30 A.M., 1:00 P.M., and 3:30 P.M.) and alphabetically. Appointment cards were sent out by mail. These were later collected at the entrance of the examination center where they were exchanged for the examination forms (supplied by the Kansas State Medical Society) to be used in the clinic. The examinee's name, address and family physician's name were typed on these forms in advance. Only eight of the 300 registered cancelled their appointment and everyone came on time.

The registration had been preceded by a few days of radio and newspaper publicity which included information concerning organizations and people participating; there were advertisements supported by the druggists in each locality throughout the two counties involved.

Examination

The responsibility for different aspects of the examination was given by the medical society's committee to various women's organizations: The Stearns-Benton County Medical Auxiliary recorded the past histories of the examinees. The local registered nurses and nurses aides responded generously to help with the examinations. The St. Cloud Health Council was responsible for supplying all the lay help. Among other duties, these people directed traffic and served a light meal for the workers. A mobile x-ray unit for chest examinations was supplied by the Minnesota Health Department.

The personnel functioning in the clinic at any one time included: fourteen physicians, twenty-two graduate nurses, twelve nurses aides, and twenty-eight laywomen.

Upon presenting their appointment card at the desk near the high school entrance, examinees were given their history and examination form to carry with them through the entire examination. They were directed to the gymnasium where their past medical histories were checked through on the examination forms by eight women familiar with such procedures. From there, both men and women proceeded to have their ears, nose and throat examined by two specialists. They then separated to the dressing rooms on different floors of the school where they disrobed; women, to a dress or a cotton robe and shoes; and men to trousers and shoes. Their weights and temperatures were taken, and the remainder of the examinations of the two sexes were conducted separately.

Five screened examining tables were used for vaginal and abdominal gynecologic examinations. An equal number of physicians, nurses and recorders of findings worked together in teams of three persons. Speculae were cleaned and sterilized in xylene. The women's examination were completed in rooms with four additional tables where the breasts, heart, chest and skin were considered.

The men stopped at two places for abdominal and rectal examinations and skin, heart and chest surveys. Proctoscopic examinations were not performed unless the patient's history indicated the need.

Results

Of the 292 people examined, there were 213 females and seventy-nine males. The latter generally accompanied their wives. The examinees were responsible citizens of the community. One hundred and twenty had a positive history of cancer in the family. There were 392 surgical operations tabulated in the entire group or 130 per cent, thus averaging more than one per person examined. There was no indication of extreme neuroticism in the group. The conditions checked as positive in the histories were so numerous as to invalidate the accuracy of any summary of the reports. One hundred and sixty-six or 57 per cent were referred to their family physician for further study or treatment. Of these, fifty-five examinees required biopsies.

Of the twenty-five precancerous manifestations found, there were four kraurosis vulvae, sixteen keratosis and one each of cervical erosion, thyroid nodule, chronic hoarseness, and a mole. The twenty-four possibly cancerous lesions included eleven nodules in the breasts and either one or two cases of the following: cervical papilloma, large pelvic mass, postmenopausal discharge, cervical lymphadenopathy, rectal ulcer, rectal papilloma, melanoma of back, papilloma of inner canthus, mass in the cervix, basal cell cancer of cheek, and one ovarian cyst.

There were 177 disease processes found exclusive of the precancerous and possibly malignant conditions listed. Those of the gynecologic examination included seven cervical polyps, six cervical erosions, three cervical ulcerations, five cystoceles, four rectoceles and three cases or less of the following: leiomyomata of the uterus, enlarged uterus, pedunculated tumor of the uterus, prolapsed uterus, cervicitis, nodular cervix, vaginal discharge, trichomonas, tumor of the labia, vulva excoriations and cyst of the vulva.

It is regretted that a satisfactory follow-up has not been possible. The examinees were notified by postal card to contact their family physicians for the findings of the Cancer Detection Clinic examination. The 166 who were to have additional examinations or to be given treatment were notified twice to contact their physician. Of the 270 chest x-ray examinations, there were two suspicious of tuberculosis. No tumor masses were found.

The clinic ran smoothly throughout the day. A larger number of physicians could have been used. Fifteen to twenty chairs were necessary for people waiting for the nose and throat examination and in front of the gynecologic rooms. Otherwise, there were no delays. Most of the workers spent the entire day at their assignments.

The departing examinees were told to contact their family physician after one week for the reports. They were given small cards stating that no medical examination completely rules out the presence of cancer and that if they developed any of a series of seven specific complaints, they should immediately see their doctor.

To complete the day, an evening meeting on "Cancer" for physicians and laymen was held in the auditorium of the same school.

Summary

A one-day Cancer Detection Clinic was conducted by the Stearns-Benton County Medical Society at St. Cloud. Several organizations including the American Legion Auxiliary, registered nurses group, St. Cloud Health Council, Medical Auxiliary, Minnesota State Board of Health and the Minnesota Branch of the American Cancer Society were asked to help with specific responsibilities. There was an overwhelming demand for appointments. Fourteen physicians, twenty-two graduate nurses, twelve nurses aides and twenty-eight laywomen ran the Clinic smoothly.

Among the 213 female and seventy-nine male examinees, there was a remarkable frequency of previous surgical operations, totaling 392 procedures. One hundred and sixty-six were referred back to their family physicians for further diagnosis or treatment. Of these, fifty-five required biopsies, twenty-five had precancerous lesions and twenty-four had what might be malignancies, including eleven breast nodules.

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POSITIONS OF THE PATIENT—THEIR EFFECT ON SPINAL ANESTHESIA

(Continued from Page 383)

dangerously high level of anesthesia has been known to attend the use of these solutions.

Jones Technique.—The patient is placed in the prone position and light solution used to "soak the posterior roots."

Wilson Technique.—The sitting position is used, with light solutions. A segmental type of anesthesia may be produced. If a light solution is injected with the patient in a sitting position, the solution will float upward until a sufficiently high level of anesthesia is produced and the patient is restored to a level position. It is thus possible to produce a zonal, or segmental, anesthesia with an unanesthetized area both above and below the area anesthetized; a longer anesthesia can be produced or, what is very likely the same thing, smaller doses may be employed. Possibly less shock may occur. At least in the hands of the inexpert, this is generally regarded as being a rather dangerous procedure.

After operation abrupt changes in position are to be avoided. Suddenly raising the head may cause cerebral anemia. The vasomotor system, which ordinarily adjusts itself automatically to change in posture, does not fully recover its sensitive response for hours. Therefore, if the head has been tipped down, keep it down on the way back from the operating room and on getting into bed. If the patient has been horizontal, let him stay that way. Movements should be few and gentle. Remember, in moving the patient, that he is not anesthetized above the waist.

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History of Medicine In Minnesota

HISTORY OF MEDICINE IN LE SUEUR COUNTY

(Continued from March issue)

H. E. Conley, J. C. Kinkle, George Kelly, F. F. Clifford, G. W. Johnson, James Green, E. P. Whitford, a Dr. Kernan and a Dr. Jellison all opened offices in Le Sueur County. At the end of the decade came W. S. Woods, S. B. Coe and James McKeon. J. P. Williams practiced in Le Sueur from 1884 to 1886.

During these years diphtheria was prevalent in a fatal form. In the winter and spring of 1880, the vicinities of Cordova and Montgomery were afflicted, and, at Waterville, Dr. Case reported thirteen cases in one week. All through the following year there were cases reported at various places in the county. One family near New Prague lost five children, and many families lost at least one member. In November of 1882 the newspapers recorded an outbreak of fifteen cases, including five deaths, in the town of Le Sueur. Dr. Ayer, to whom the county commissioners gave full authority, suggested disinfecting the sick rooms in order to prevent further spread of the disease. In the fall of 1883 and in the fall of 1884 there were several fatal cases. After two years of freedom from the disease, Le Sueur County was struck again—the school at Kasota was closed in order to halt the spread of the disease.

The last two years of the decade also saw recurrences of diphtheria.

In 1880, cases of cholera morbus were distressingly frequent at Ottawa. The following fall there was an outcropping of typhoid fever in the lower part of the town of Le Sueur. In the spring of 1882, and again in 1883, a number of cases of scarlatina were tallied, and in 1889 there was an epidemic. May issues of newspapers reported 120 sufferers from this malady.

Cases of smallpox in Montgomery created a furor in the spring of 1882. Dr. E. J. Brown of Minneapolis gave a graphic report of the event to the State Sanitary Conference later that year, telling the conference that when he was summoned to take charge he found the pest house located about six miles from the town. When he entered, he saw that one room contained all the patients —four males and three females—ranging in age from twelve months to twenty-four years. The only attendant was their mother, exhausted and half-crazed with grief. The four older ones were in an advanced stage of the disease, and their black faces presented an almost unbroken suppurative tract. The stench and filth were terrible.

The children had been sick for nine days without a physician, medicines or proper food and with only such care as the mother could give. The throats of the older ones had become so affected by the disease that they could swallow no solid food; they had had nothing but flour gruel and alcohol.

The doctor reported that he had to get food by persuasion and threat, and he had a difficult time vaccinating people.

The local inhabitants were fearful of contracting the disease and would not furnish the physician with a horse because they did not think he should break quarantine. After a week he was allowed to take rooms in the hotel at Mont-

gomery. The baby died of neglect and starvation. A fourteen-year-old boy, who belonged to the infected family but who had not been exposed to the disease, was kept in an out-house and people were forbidden to harbor him.

One of the patients had been seen twice during the early stages of the disease by Dr. W. H. Wood; but after the diagnosis, the town would not allow the doctor to call on the man again. A telegram to Minneapolis brought no response. After the death of the patient, the county supervisors sent a man to disinfect the residence, which he did by burning clothes, furniture, kitchenware and other household equipment. Nine days later the other members of the family had become infected, and Dr. Brown was called.

Many of Dr. Brown's statements, as recounted here, were denied by Frank Becker of Montgomery,* who said that there had been no objection to vaccination, that a man was hired as a nurse for three dollars a day, that Dr. Brown had arrived two days after the family had been taken ill (instead of nine days later), and that provisions of all kinds had been furnished to him.

1890-1900

There were no serious epidemics in Le Sueur County during the nineties. In 1891, in Kasota, there were a few cases of diphtheria, and then, with the exception of a few scattered cases, the county was free from the disease until 1900, when it again appeared in the town of Le Sueur. In 1892 there were a few cases of scarlatina in Le Sueur; in 1900 there were a few in Le Sueur Center.

In 1890, Dr. George Schultz located in Elysian. In 1893, Dr. D. A. Kirk arrived in Le Sueur, where he remained for about fifteen years. In 1894, Dr. H. B. Aitkens, a recent graduate of the University of Minnesota, opened an office in Lexington. Several years later he moved to Le Sueur Center, where he was an active member of the profession. Dr. J. E. LeClerc, a member of local and state medical societies, began practicing in Le Sueur in 1896. Dr. J. F. McDonald was practicing in Kilkenny about this time. In 1890, Dr. Norman G. Parker located in Le Sueur. A number of other physicians came for very short periods.

The office of coroner was filled by Drs. Umphrey, Dolan, Aitkens and McDonald. In the town of Le Sueur, Dr. W. H. Fisher served as president of the Board of Health. F. A. Dodge and N. G. Parker were also members of the board. In Montgomery, James McKeon officiated; and in Elysian, George Schultz held the position.

In 1892, Dr. E. P. Case opened a sanitorium at Waterville. The building was situated on an elevation overlooking the lake. It was built of wood, three stories high, and had a basement 38 by 74 feet. The sanitorium featured such modern improvements as steam heat, hot and cold water, Turkish, electric and shower baths. A few years after its opening, the sanitorium was destroyed by fire; but since it was fully insured, the structure, according to historical records, was rebuilt.

Although privately built telephone lines, of short length, began to be used between house, office and drug store, it was not until some years later that telephone companies began to connect farm houses with central offices. Practically all calls for physicians came by messenger, and until 1910 or thereabouts, the doctor traveled horseback or by horse and buggy. In many localities like this one, pioneer days lasted a long time.

* *Le Sueur Sentinel*, December 28, 1882.

About 1903, the Nicollet-Le Sueur Medical Society was organized. Physicians from the western part of the county generally belonged; whereas, those living in the eastern part affiliated themselves with the Scott-Carver County Medical Society. Those from the southwest belonged to the Waseca County organization.

HISTORY OF MEDICINE IN NICOLLET COUNTY

The business of treating sick persons, in the stretch of country now known as Nicollet County, was in the hands of Indian medicine men until 1853, when Fort Ridgeley was established in the western part of the county. Consequently, the first physicians were members of the United States Army. Dr. Alexander B. Hasson, an assistant surgeon, came to the fort in 1853 and was stationed there for a few months. He was succeeded by Dr. Asa W. Daniels, a graduate of the Medical College of Ohio. After a short stay, Dr. Daniels was appointed surgeon to the Lower Sioux Agency, about twelve miles away in Redwood County. It was here, in 1853 or 1854, that an Indian with a bad gunshot wound in his arm was brought to him for treatment. The doctor judged that the arm should be amputated, so he administered chloroform and performed the operation in the presence of the man's friends. This was the first time, so far as anyone knows, that chloroform had been used in the district northwest of the Mississippi. It is said to have made a great impression on the Indians, who spread the news far and wide that there was a white doctor who could make the soul leave the body and then come back again. Months later an Indian medicine man came a distance of "many suns" to get some of this wonderful stuff; but although he offered his pony and all his other possessions, the doctor refused his request, and he returned home a much disappointed man.

The third surgeon at the fort was Roberts Barthelow, who later became a professor at Jefferson Medical School and the author of a popular text book.

The fourth physician stationed at the fort was Dr. Alfred Mueller. He was there from 1861 until 1867, when he went to New Ulm and became one of the outstanding practitioners of Brown County. Dr. Mueller was the only physician at the fort in 1862 during the memorable battle with the Indians. The fort was, at that time, filled with refugees from the surrounding country, and it is recounted that during the attack 300 women and children lay for hours flat on their faces in an outbuilding without food or water.

Dr. Mueller showed his ability and skill as a surgeon, continuing his work in the din of battle, while expecting to lose his scalp at any moment. In addition to caring for the battle casualties, Dr. Mueller officiated at the births of three children.

Mrs. Mueller, who evidently had some ability and training as a nurse, helped her husband in caring for the wounded. Charles S. Bryant, in his *History of the Minnesota Valley*, paid a glowing tribute to the doctor and his wife for the services they rendered at this time, and the Commonwealth of Minnesota erected a monument to Eliza Mueller on the site of the Indian siege.

The first physician in civil practice to locate in Nicollet County was Dr. Hiram Wesley Catlin. He came to St. Peter in 1855 and practiced there until 1861, when, as he was about to move to Ohio, he was suddenly taken ill and died. Dr. Catlin was a graduate of the Louisville Medical College and had served in the Mexican war and practiced in Indiana before coming to Minnesota. At the time of his death, his practice in St. Peter was taken over by Dr. Asa Daniels, who returned to Nicollet County to live, and who was to become one of the most

prominent physicians in the locality. He served on many local boards and later became one of the first members of the Minnesota State Board of Health. He held membership in various medical fraternities.

E. F. Clark and William F. Hunter also located in St. Peter in 1855, and, in the following year, came R. H. Ewing, a doctor named Horne and C. Robb. These men remained only for short periods of time. Ewing practiced medicine and also kept the Ewing House, but, even at that, he must have found business difficult in the pioneer settlement. In attempting to collect his bills, prior to leaving the county in 1859, he announced that "ginseng, oats or corn will be taken at their highest market value."† It is doubtful if Robb practiced medicine during his stay. One other physician, Dr. Philander P. Humphrey, located in the county in these early days. He came to St. Peter in 1857 and remained until he was appointed, at a salary of $1,000 a year, to fill Dr. Daniels' post as physician at the Lower Sioux Agency in Redwood County. He and his wife and two children were killed during the Indian outbreak of 1862.

Besides Dr. Daniels, about fourteen other physicians practiced in Nicollet County during the sixties. One of the first to come was Jared Waldo Daniels, a brother of Asa Daniels. Before his arrival in St. Peter in 1860, he had been a government physician at the Yellow Medicine Indian Agency. During the Civil War he rose to the rank of major, serving under General H. H. Sibley and General Alfred Sully. After the war he spent two years in Faribault, Rice County, and then returned to Nicollet, where he lived, off and on, for a stretch of fifteen years. During this time, he served at various Indian agencies. William B. McCullough and L. H. Bullious were also early-comers who practiced in St. Peter for short periods. C. W. Le Boutellier, a member of the Ninth Minnesota Regiment of Volunteer Infantry, was stationed in the town in 1862. These men were followed by M. Flossion, a Frenchman; J. La Dow, Calvin Pratt, Frank W. Page, Henry C. Lehnert, and Isaac Cosner. The two latter were the first homeopaths in the county. All of these men lived at St. Peter. C. Hoberg, the first physician at Traverse, practiced there from 1864 until his death ten years later. Samuel E. Shantz, the first superintendent of the State Hospital for the Insane, came in 1866 and held the position until his death from typhoid fever in August, 1868. This institution, the first of its kind in the state, was located at St. Peter by the state legislature of 1866.

The *St. Peter Tribune* for January 23, 1867, gives an idea of the size of the new institution, which had over forty patients—"as many as there is room for." Dr. Shantz' assistant was a young Canadian, Jacob E. Bowers, who had just received his diploma from the medical department of the University of Michigan. He came in the spring of 1868 and remained at the hospital until he was appointed, ten years later, superintendent of the hospital for the insane at Rochester. He served as acting superintendent at St. Peter during the five months interim between the death of Dr. Shantz and the arrival of his successor, Dr. Cyrus K. Bartlett. The latter, a graduate of the Harvard Medical School, had been in charge of an asylum in Massachusetts before coming to Minnesota. Under his administration, the old building was abandoned and the present site was occupied. New buildings were built as the number of occupants increased.

At this time there was no office of county physician. The post of coroner was filled by Isaac Cosner.

There seems to have been an unusually large amount of sickness in Nicollet County during the sixties. During the first two or three years of the decade

†*St. Peter Free Press*, September 14, 1859.

there were a few cases of measles, typhoid fever and scarlet fever. In 1863 there were several people who died on the same day that they became ill, and their deaths were attributed, according to the newspapers, to spotted fever. However, the major complaint of these years was diphtheria. There were many cases in Nicollet County and in neighboring localities. A report written by Dr. A. W. Daniels for the Minnesota State Board of Health stated, in part:

"The first epidemic of diphtheria appeared in our village during the fall of 1862, soon after the Indian outbreak. At that time the town was crowded with refugees from the surrounding country, and every house was filled to capacity. The sudden influx of so large a number of destitute, half-clad and suffering people soon produced a deplorable sanitary condition. Typhoid fever was first to make its appearance, soon followed by measles and diphtheria, the two latter becoming epidemic. I have no notes to enable me to supply an accurate number of cases and percentages of mortality and, therefore, must rely upon memory. Probably there were not less than seventy cases of diphtheria, of which some twenty were fatal. The deaths were mostly those of children under ten years of age.

"Throughout the epidemic the disease manifested a decided tendency to attack such as were suffering from measles, and a large proportion of the deaths was the result of this complication."

A newspaper item furnishes the information that between August 18, 1862, and January 23, 1863, there were 127 persons buried in the local cemetery, and that, of these, twenty were residents of the town, and sixty of the total were children. Sporadic cases occurred in the following years.

In 1862, there was, apparently, a military hospital in St. Peter and, at this time, C. W. Le Boutellier was the surgeon in charge. In the winter of 1863-64, St. Peter was the headquarters of the Sixth Regiment, under the command of Colonel Crooks. This added to the already crowded condition of the town. Living quarters were unsanitary and badly ventilated. Sewage was not properly disposed of, and the water supply, from shallow wells, soon became polluted. The result was a number of cases of measles, typhus, cerebrospinal meningitis, diphtheria and smallpox. Under these adverse conditions Dr. Alfred Wharton, surgeon of the Sixth Regiment, performed his duties, assisted by Dr. Potter. Nine deaths occurred from smallpox alone. Naturally these diseases were not confined to the soldiers, but involved the civilian population as well. In 1869, according to the *St. Peter Tribune*, there were seven cases of smallpox in the town of Bernadotte, three of which were fatal.

1870-1879

M. W. Scott practiced medicine in St. Peter for a short time in 1870, and C. A. McCohlon and J. R. Nelson were there for brief periods in 1871. Two other physicians came about this time, both of whom were to practice in the county for many years and to become well known in their profession. They were Daniel B. Collins and George F. Merritt. The former located in St. Peter shortly after receiving his diploma from Rush Medical College. With the exception of two years, he continued to live in St. Peter until his death in 1898. He was several times elected health officer and city physician, and he served as surgeon for the Second Regiment of the Minnesota National Guard. He belonged to many organizations, and when the local and state medical fraternities were organized, he joined. Dr. Merritt, also a graduate of Rush, practiced in St. Peter until his death in 1921. He was also a member of various fraternal orders and the local, state and national medical societies.

Dr. John Pehrsoon shared the office of Dr. A. W. Daniels for a year or so. He later became a lecturer at the College of Physicians and Surgeons in Min-

neapolis. Dr. J. H. James spent the years 1876 to 1891 in St. Peter, and besides his duties as assistant physician at the hospital for the insane, he often attended patients in the town and the surrounding country.

Marion Putnam, about whom very little is known, was in St. Peter in 1878. In the same year came Dr. V. Bolon, a German who specialized in eye and ear work, but who probably made more money as a *geburts-helfer*.

In all, there were at least nine regular physicians and one homeopath who were well established in the county by the end of the seventies. All were located in St. Peter.

The Minnesota State Medical association, reorganized in 1869, elected a number of Nicollet County physicians to membership during the seventies. Dr. A. W. Daniels was a charter member. Dr. C. K. Bartlett, elected in 1870, wrote the semi-annual essay in 1872 on the subject of insanity and its treatment. Dr. J. E. Bowers, also of the St. Peter asylum, was elected in 1870. Later members were John Pehrsoon, J. H. James and G. F. Merritt.

Dr. A. W. Daniels was a member of the Blue Earth Medical Society, which changed its name in 1872 to the Minnesota Southwestern Medical Society.

In 1870, typhoid fever was reported to be quite prevalent in the vicinity of St. Peter. In November, Dr. Daniels reported that he had twelve cases under his care. In the same year there were rumors of many cases of smallpox. The newspapers insisted, however, that aside from a few cases at the hospital, there had been only three cases of varioloid and one mild case of smallpox in the town. Several persons living four or five miles from town were reported infected in 1872, but apparently the disease did not spread outside of one family circle.

It was said in the spring of 1875 that "mumps were spread all over town" and that eight persons suffering from the disease were staying at the Nicollet House. In the spring of the following year several small children in St. Peter were reported dead of whooping cough. There were always a few cases of typhoid fever, and scarlet fever was prevalent in a mild form, during 1875 and 1876. A few cases of diphtheria appeared every year. In 1875, 1878 and 1879, they became more numerous and more often fatal.

Dr. A. W. Daniels, in his report to the State Board of Health in 1878, reported the epidemic as follows:

"The present epidemic of diphtheria commenced early in September and has not yet fully disappeared. It was noticed that the disease did not effect a lodgement in a particular part of town and spread from that infected district, but appeared in different localities about the same time, and the first victims were children whose tender years had necessarily confined them to their homes.

"The number of cases, as near as can be ascertained from careful inquiry among the physicians, has somewhat exceeded 100. Of these, fourteen fatal cases are reported. But few adults have been attacked, and none have died. Children have been the principal sufferers, and the fatal cases are generally under eight years of age.

"The catarrhal has been the prevailing variety. But this form of the disease has manifested a marked tendency to extend itself to the air passages and to assume the croupal variety. From this complication has come the great mortality of the disease. Every death during the present epidemic has been the result of croupous diphtheria—nineteen cases have occurred, with only five recoveries.

"A large proportion of the fatal cases received little or no treatment. Parents, supposing their children were 'only suffering from a cold,' neglected calling a physician until it was too late to prevent a fatal result."**

**Written in 1878. Published in the Minnesota State Board of Health *Reports* for 1879.

Courtland was the scene of the epidemic of 1879. The disease, apparently imported from Mankato, began in the spring. There were three fatal cases in the first family infected. It then spread over almost the entire township. It was noticeable that in the western part of Courtland, where the drainage was good and the living conditions more sanitary, that there were fewer fatal cases than in the eastern part where the drainage was very poor. During the year the total number of deaths from all causes was 188. Of these, twenty-one were caused by diphtheria.

During the seventies, Isaac Cosner often filled the office of county coroner, and A. W. Daniels and G. F. Merritt, the office of county physician.

1880-1889

E. C. Putnam, probably the first regular physician in the town of Nicollet, came in 1881 and remained there for about a year and a half. A. Keller also located there at about the same date. He remained an even shorter time. Joseph Wicke enjoyed a good practice in Nicollet from 1887 until his death in 1895. He also ran a drug store and served as president of the village council.

W. A. Jones, a native of Nicollet County, served as intern at the state hospital in 1881 and 1882. He later practiced in Minneapolis and was appointed as lecturer on nervous diseases at the University. He was for many years editor of the *Journal Lancet* and a member of the State Board of Health.

Another newcomer was George W. McIntyre, who practiced in St. Peter from 1883 until his death in 1920. During this period, he served for several years as assistant physician at the state hospital.

Arthur F. Kilbourne was also an assistant there from 1884 until 1889 when he was appointed superintendent of the hospital for the insane at Rochester. In 1889, C. M. Skinner located in St. Peter, where he built up a large practice. C. Kranz also practiced in Nicollet County during the eighties and nineties. He held an exemption certificate.

In 1881, when the Minnesota Valley Medical Society was organized in Le Sueur, several Nicollet County physicians were present. A. W. Daniels was elected second vice president, and G. F. Merritt, treasurer, an office which he held almost continuously until 1910. He was also treasurer of the Southern Minnesota Medical Society after the two organizations merged in 1913. Other Nicollet County members elected during these years were W. A. Jones, C. K. Bartlett, who served as president in 1882, D. B. Collins, G. W. McIntyre and J. H. James. The latter was also elected to membership in the Minnesota State Medical Society.

The effect of organizing may be seen in an agreement between Drs. Daniels, Collins and Merritt, who published a notice in 1884 to the effect that all calls made between the hours of 9 p.m. and 5 a.m. would be charged at double the usual rates.

Physicians may have complained of not being paid, but they could scarcely complain of not having enough work to keep them busy. During the eighties, diphtheria was prevalent in a fatal form almost every year. It was particularly bad in the early years of the decade and, in 1880, there were far more deaths than the county had ever known. It broke out in Courtland and Lafayette in May. The latter town had fifteen deaths from the disease within that one month.

At one period in June, Dr. Collins reported that he was attending twenty-seven cases in the town of Bernadotte. There were also many cases in New Sweden, Lake Prairie and St. Peter. It was not at all unusual for families to lose three or four children within a few weeks. Many families lost all their children. The

worst part of the epidemic seems to have been over by the end of June, although there were a number of fatal cases during the following months.

The total number of deaths from all causes in 1880 was 289. Of these, 115 (including the fifty-eight in the State Hospital for the Insane) were caused by diphtheria. In 1881 there were fifty-seven deaths from diphtheria. A few occurred in almost every month of the year, and they were distributed pretty well over the county, although Lafayette and Lake Prairie led with fourteen and thirteen cases, respectively. Most of them were children.

In 1882, the total number of fatal cases was eighteen. Statistics for the next four years are lacking, and it would seem that there were fewer cases and considerably fewer deaths. In 1887 there were twenty fatal cases. In 1889 there were also quite a few. Not merely Nicollet County but the whole state suffered during these years. It is appalling today to think that any epidemic could continue so long and extend over such a wide area.

Second on the list of contagious diseases was scarlet fever. It was most prevalent in the last two years of the decade, but, fortunately, it was mild in form. From June, 1887, to 1888, there were twenty-three cases, with four deaths, in St. Peter. From June, 1888, to June, 1889, there were thirty, including only one death. Other diseases, chiefly consumption, typhoid, measles and whooping cough, affected the population, but usually the epidemics were mild in form and there were few deaths.

In St. Peter a local board of health took measures to protect the citizens of the town. School children were vaccinated for smallpox, and in 1881 a set of rules was inaugurated which insisted on the reporting and quarantining of contagious and infectious diseases and prohibited public funerals for such cases. In 1885 a notice was published that all owners of property in the city should clean up their premises. A public dumping ground was designated. In 1889, steps were taken to improve the city water supply. Drs. McIntyre, Collins and Merritt served on the board of health.

There seems to have been no office of county physician during these years, since all the well-established physicians in the county, and some from outside the county, sent in bills to the county commissioners for medical services rendered. Sometimes the county poor were sent to hospitals in neighboring counties for medical care because Nicollet County had no such facilities.

Among the interesting operations performed by local men at this time were those for cataract done by Dr. J. H. James, who was one of the first eye specialists outside the Twin Cities.

(To be continued in the May issue.)

President's Letter

WE CAN'T STOP NOW

The American doctor never finishes his education. His M.D. degree is only the entrance requirement to the larger school of medical practice. At no point can he stop and reflect that a complete grasp of medical science is his; for the discoveries and developments in this field never stop. Often we doctors feel as frustrated as a man running up a downward-bound escalator when we visualize the literally endless vista of steps to be taken in the direction of increased knowledge and skill.

And there is never time enough.

Not time enough to read all the medical journals, observe all the techniques of our colleagues, enroll in all the refresher courses, study all the important case histories. No matter how many hours we slice from our already limited leisure time, there is never time enough to do the study and research we'd like.

That is why the annual meeting of the Minnesota State Medical Association is so valuable. Here, in a fact-packed three days, we can gain the results of hundreds of hours of analysis and condensation.

In essence, it is like the arrangement the late Joseph Pullitzer had for news coverage. He hired a staff of journalisfs to do nothing but read through the news, weigh and compare and sift out the trivia. The finished product was a concise, comprehensive survey of the day's events and took him only a few minutes to peruse.

As always, the annual meeting has a careful balance of lectures and clinico-pathological sessions. The subjects have been selected by the Committee on Scientific Assembly after long consideration and comparison of values.

I believe we approach this convention with a deeper appreciation than we have in former years. In view of the many critical thrusts at the economic and scientific principles of medical practice, we have an even greater responsibility to enhance our value as doctors and citizens.

President, Minnesota State Medical Association

Editorial

CARL B. DRAKE, M.D., *Editor;* GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

GOVERNMENT MEDICAL CARE IN ACTION

BEFORE making any radical change in the provision of medical care such as the Wagner-Murray-Dingell Bill provides, or even advocating the change to government provision medical care, it would be well to understand how it works. European countries have had government medicine of various types for many years, and can be cited as illustrative of its functioning.

In England the panel system was inaugurated in 1912 and applied to a third of the population. During World War II, it expanded to include half the population. This was a limited medical service providing only for the services of the general practitioner in the office and at home. On July 5, 1948, all types of medical service were included and, although this new experiment has been in effect but a short time, government medicine itself is not new in England, and an evaluation of its operation today is possible.

Impressions of the status of medical practice in England today have been recorded by Dr. William H. Sweet* of Boston after a recent period of practice there which culminated a number of years' residence and an intermittent practice in England. The picture he paints of the present quality of medical practice and the lot of the medical profession under the socialistic regime is illuminating.

The panel system continues, and general practitioners are swamped by patients with petty complaints and an apparently increased number of neurotics. Certificates for sick leave, extra food and even hot water bottles occupy much of the practitioner's time. Those with a panel of 2,000 see, on the average, fifty patients a day; and those with a panel of 4,000, as high as 100 a day. One can imagine that ordinary history taking and physical examination of so many individuals is an impossibility. Although there is one doctor for every 875 inhabitants in England, the panels are larger than this number, as individuals are assigned to the general practitioners only. The easiest way to get off work is by means of a doctor's certificate, and if the doctor doesn't readily comply, the individual joins another panel. X-ray service, for the most part, is limited to the hospitals, and this type of service is swamped with the needs of hospital cases. As a result, the general practitioners, as a rule, cannot follow an interesting diagnostic case to any extent, but must refer the patient to the specialist in the hospital. House calls day or night being free, a practitioner can easily be worn out, if he is conscientious, by midnight calls, which he dare not refuse, in case he might overlook an emergency. Orthopedic appliances and eyeglasses, being free, are overprescribed. Further, it is attested, a manufacturer, if not in government favor, may easily be driven out of business.

The author tells of one outstanding specialist who anticipated great things from government medicine but has been greatly disappointed, inasmuch as his new institute, which should have been completed in four months, has not been completed after four years due to government red tape—the requirements for a permit for every item of material, transportation, type of labor, ad infinitum. The author tells of requesting a special kind of instrument from the University of Health. After eight months, the request was refused because the instrument was of an unusual type. Long before that he had purchased one from a private source.

Salary compensation for specialists (in England, known as consultants) has not yet been settled, but the average compensation is about $2,500 net after taxes; and this for one who has spent fifteen years in study and practice. The mechanic in England is better compensated!

The British Medical Association was not consulted when the medical profession was taken over by the labor government. The author believes that the profession made a mistake in not analyzing the defects of the proposed system and proposing in its stead a well-conceived plan of improvement, taking a stand against the ill-advised government changes. The profession in

*Sweet, William H.: Recent impressions of medical practice in Great Britain. *New England Journal of Medicine,* 240:168, (Feb. 3) 1949.

America might well profit from the experience of our British confrères.

The author makes a clear analysis of the disadvantages of any system of medical care which changes the incentive of the patient, making the physician, rather than the individual, responsible for his client's health. When convalescence is paid for by others it is bound to be protracted. Subjective symptoms are always difficult for the physician to evaluate, and the addition of certain factors inherent in government care of sickness makes differentiation of serious organic illness from functional or simulated complaints well nigh impossible. When it is advantageous for individuals to present themselves to a doctor with medical complaints, more will do so.

The author pointedly concludes:

"If the task of assessing the ability to lead an active life and the compensability of lack of enthusiasm therefore is to be extended to the entire population, the experience in Great Britain suggests that in this country extended ill feeling between the medical profession and other segments of the nation and a deterioration in the quality of medical care can be anticipated."

THE ARTHRITIS AND RHEUMATISM FOUNDATION

EFFECTIVE attack on crippling rheumatic diseases will require the raising of at least $6,100,000 for research alone over the next five years. This recommendation was made recently to The Arthritis and Rheumatism Foundation by a National Research Council Committee appointed to survey research needs in this field.

Rheumatic disease, the committee's report stated, "is the most common cause of chronic illness." It pointed out that "approximately 7,500,000 Americans have arthritis or some other form of rheumatic disease."

"The magnitude of this problem is great," the committee declared, "as manifest by the incidence of the diseases and by the many related social and economic problems. The rheumatic disease group, although one of the oldest known to medical history, is one of the most neglected fields of medicine."

The need for research, it was pointed out, is shown by the fact that, except for conditions directly traceable to infections, the causes of rheumatic disease are still unknown, and present treatments, though helpful, include no specific cure.

Seventeen distinguished physicians and scientists, under the chairmanship of Dr. Walter Bauer of Harvard Medical School, participated in the survey report. The five-year program they recommended calls for $4,300,000 for support of researches, and $1,800,000 in research fellowships to train able young investigators, and thus to overcome a deficiency in the number of competent research workers in the field of arthritis and other rheumatisms.

The other members of this committee are: Dr. Franz Alexander of University of Illinois; Dr. Granville A. Bennett of University of Illinois; Dr. William Bloom of University of Chicago; Dr. Robert Elman of Washington University; Dr. Richard H. Freyberg of Cornell University; Dr. Ralph W. Gerard of University of Chicago; Dr. Philip S. Hench of Mayo Foundation; Dr. C. N. H. Long of Yale University; Dr. Colin M. MacLeod of New York University; Dr. Karl Meyer of Columbia University; Dr. Charles Ragan of Columbia University; Dr. William D. Robinson of University of Michigan; Dr. Edward S. Rogers of University of California; Dr. Howard A. Rusk of New York University; Dr. Francis O. Schmitt of Massachusetts Institute of Technology; and Dr. T. C. Thompson of Columbia University.

All the rheumatic diseases have one thing in common, the report stated. The portions of the body which they attack—the bone, cartilage, muscle and connective tissue—all develop from what is called "embryonic mesenchymal tissue."

"It is essential," the report declared, "that information regarding this significant tissue be increased as rapidly as possible to afford basic data needed for elucidation of the over-all problem."

Two other broad fields of research which the committee said should be developed were the specific clinical and physiological problems of arthritis and other rheumatic diseases, and the social, environmental and other public health factors bearing on these diseases.

The committee indicated many specific research leads which should be investigated thoroughly. Rheumatoid arthritis, the worst of the cripplers, tends to wholly or partially disappear during pregnancy and during severe attacks of jaundice, thus indicating, according to members of the committee, that a specific cure for this disease can be found.

The fact that some forms of rheumatic disease, such as rheumatoid arthritis, more often attack women, while others such as rheumatoid spondylitis or "poker spine" chiefly attack men, was cited as the example of the need for research on the sex hormones and other ductless gland products in relation to rheumatic disease.

Other projects recommended to The Arthritis and Rheumatism Foundation included:

The relation of germ and virus infection to the onset of rheumatoid arthritis and of rheumatic fever, which by bringing on heart disease kills more children between the ages of five and nineteen than any other illness.

Studies of the blood and circulatory system aimed at checking osteo-arthritis, the rheumatism of old people, together with aging and other degenerative changes.

Hereditary factors in relation to all rheumatic diseases, including gout.

Emotional factors related to the development and persistence of arthritis.

In the attack on the rheumatic diseases, it was recommended that research be carried down to the basic molecules of tissues involved. For this, it was said "it is necessary to enlist the cooperative efforts of physicists, chemists, biologists and medical scientists." It was declared that new technique, such as the use of radio-active tracer substances and other new scientific techniques should be used.

"Much may be accomplished by electron microscopy," the report declared. "Application of biophysical techniques, x-ray diffraction, ultraviolet, polarization, phase-contrast, and dark-field microscopy also deserve encouragement, and may provide a clearer understanding of the normal as well as abnormal structure."

The Arthritis and Rheumatism Foundation, for which the report was prepared, has its offices at 535 Fifth Avenue, New York City. It was organized by Floyd B. Odlum, who is chairman of its board, and a group of lay and medical leaders throughout the nation. It is now trying to raise $2,000,000 for its first-year program.

Half of this money is to go to the Foundation for the purpose of financing a nation-wide research program and conducting a campaign of public education concerning what can be done about these crippling afflictions.

The other half will be retained locally to help provide better means of treatment. The Minnesota-Dakota Chapter of the Foundation is seeking to raise $50,000 of the needed $2,000,000.

Here is how the $50,000 to be raised will be spent:

For nation-wide research and education	$25,000
For a Minnesota-Dakota Rheumatism Diognostic Center at the Mayo Clinic	10,000
For a special course in rheumatism for Minnesota and Dakota practicing physicians, to be conducted at the University of Minnesota	8,000
For studies, plans and public education concerning what ought to be done about the rheumatism problem in Minnesota and the Dakotas	7,000
Minnesota-Dakota goal	$50,000

One of the most effective uses which can be made of funds retained by the local Chapters is the support of beds which will be used for the study of arthritis and other rheumatic diseases. Only government funds can hope to cope with the enormous cost of beds for chronic custodial care. Private funds, however, spent primarily on beds which are used to study arthritis and other rheumatic diseases, may open the way to the discovery of better means for prevention and cure. And, while this search goes on, they will help immediately to prevent chronic crippling deformity.

C. W. Fogarty, Jr., M.D.

BETTER MEDICAL DENTAL INTEGRATION

WE HAVE before us a report by the joint committee from the Rhode Island Medical Society and the Rhode Island State Dental Society on medical-dental relations. The function of the committee was to study the existing relations and make recommendations for improving them. This report has recently been widely disseminated in the hope that improvements in the various phases of inter-relationship between the two professions, from the standpoint of education, practice, research, not only in Rhode Island, but on a national scale, will result.

The medical schools may justly be accused of neglecting the dental field in their training of physicians. Possibly the dental schools have restricted the teaching of dentistry to too narrow a field. We *do* know that the average physician knows little about the science of dentistry and as a rule, is content to leave treatment problems to the dentist. Why should the physician consider as his field the entire patient—except his teeth? It is certainly to the advantage of the

patient if his dentist knows when symptoms appearing in the mouth indicate medical consultation.

The Council on Education and Hospitals of the AMA has advocated the inclusion of dental departments in hospitals throughout the country. The Council on Education of the American Dental Association has supported the measure by setting up standards for hospital dental internships and residencies. This is a practical and desirable step for the larger hospitals and would facilitate the establishment of medical-dental clinics for reciprocal exchange of professional knowledge.

In the field of research there is need for cooperation between the medical and dental professions. The problem of the prevention of dental caries must be one of disturbed metabolism which neither profession, so far, has solved. Hospital medical-dental clinics might afford material for research in this field. The value of fluorine in the prevention of dental caries can be determined only by widespread trial.

We believe the Rhode Island Medical and Dental Societies have made a valuable contribution in calling attention to the desirability of more dental instruction of medical students and more medical instruction of dental students; the establishment of medical-dental clinics in hospitals, and more exchange of knowledge by the two professions through the medium of societies and publications.

"LABORATORY ABUSE"

IN THE editorial column of MINNESOTA MEDICINE (July, 1947) under the caption "Laboratory Abuse," was published a discussion against excessive laboratory procedure. It may be of interest to call attention to what our British Colleagues have said recently on the same subject.

Under the title "Where are We Going?" in the *British Medical Journal* of March 13, 1948, Franggon Roberts, Honorary Physician in charge of Douty X-Ray Clinic, Addenbrooks Hospital, Cambridge, discusses in the most striking and philosophical manner the mounting costs for x-ray examinations which is due to a terrific increase in requests. Since 1945, cost of hospital care, cost of out-patient attendants, and the number of pathological examinations have risen enormously. The ground he covers in trying to arrive at the logic of all this is a commentary on what is going on in the practice of medicine today. Every physician interested in the trends in practice should read this paper.

In Edinburgh, Edward B. Hendry, B.Sc., Ph.D., M.D., Ch.B., in a paper entitled "Medicine as a Planned Economy" (The Biochemist's View) in the *British Medical Journal,* (Sept. 1948) was inspired no doubt by Roberts' paper. He discusses the experiences in the biochemical laboratory of the Royal Infirmary. The rise of requests for laboratory examinations has risen very rapidly since 1945. He quotes Roberts' apt remark on this rise which he calls an "acceleration toward infinity." Dr. Hendry's discussion of the portent of this acceleration is interesting reading. To quote his conclusions:

> "Everyone must agree that the alarming increase in the number of laboratory examinations must stop or be stopped before things reach the stage of becoming a farce. It would give rise to a good deal of acrimonious debate whether the process should be stopped by the clinician, by the laboratory staff, or by the hospital authorities, and whether it should be stopped by innuendo, persuasion, coercion, or compulsion. I do not propose to allow myself to become entangled in this delicate point.
>
> It is a great pity that there is not more collaboration between clinical and laboratory staffs. Active co-operation could do much to root out obsolete and unnecessary work and in other cases investigations, which are of importance, could be substituted with advantage to all."

With the present agitation in this country regarding socialized medicine, the extreme interest of the lay press in the discussion, the intense scrutiny which the lay press and the medical press are giving the English experiment, makes these two papers exceedingly interesting communications—to which every honest physician should run to read.

A large share of the success in controlling the disease (tuberculosis over the years should probably be credited to the intensive educational campaign through which the average person has been taught the importance of early diagnosis and treatment, the recognition of the characteristic symptoms, and the measures to be taken to prevent the spread of the disease. The large number of tuberculosis clinics and sanatoria have also played an important role in saving the lives of tuberculous patients. —LOUIS I. DUBLIN, PH.D., *Health Progress* 1936 to 1945, Metropolitan Life Insurance Co.

MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

NEWSPAPERS ALERT TO MEDICAL MUDDLERS

Minnesota journalists are keenly aware of the dangers inherent in the various plans for putting medical practice under government control. Excerpts from selected editorials show the trend of thought in the Upper Midwest, a trend that is encouraging to physicians, who sometimes feel that they are alone in the fight against socialism.

The *St. James Plaindealer* cites some of the fallacies in the compulsory health scheme by saying:

"To give such service free would obviously take a much larger physical plant than this nation possesses, and we possess the best that the world has produced. One thing that would surely happen in a program such as is suggested: Try as we would and be as conscientious that man can be, there would be a steady deterioration in the quality of the services rendered, the appearance of assembly line techniques and a gradual disappearance of traditional doctor-patient relationships."

Job Seekers Want It

"Congressional investigation has proved that chief propagandists for socialized medicine are those who conceive of themselves as holding important positions in a future medical bureaucracy," asserts the *Rushmore Enterprise*. "Their testimony is manifestly not that of neutral observers. The crocodile tears they shed with respect to the medical treatment received by the common citizen serves to disguise from the latter that under private medicine he is the best cared for patient in the world. Essentially, the politician is insisting upon the right to act as broker between doctor and patient on the theory, apparently, that the latter is incompetent to safeguard his own interests."

How private medicine and government medicine differ is illustrated in this striking manner by the *Vesta Vision:*

"No doubt you heard the warning over the radio, or read it in the daily paper, against the use of certain drugs as a substitute for salt. There have been three or four deaths from the use of the salt substitute, and the American Medical Association issued the warning. BUT the drug had been APPROVED by the Pure Food and Drug Administration. The Pure Food and Drug Administration is the Government agency; the American Medical Association represents individualism in medicine, the opposite of State Medicine."

Doctors Not Arbitrary

The *West Concord Enterprise* sets the record straight on the position of doctors in the socialized medicine vs. private medicine conflict:

"If anyone has an idea that the physicians of this country are fighting any and all plans that would give the American people better medical attention at a cost which is within their means, he is sadly misinformed. It is true that the great majority of doctors are strongly opposed to compulsory government health insurance, and kindred schemes which would open the gates wide to completely socialized medicine. The basic reason for this opposition is found in a statement issued by the American Medical Association, which said: 'The experience of all countries where government has seized control of medical care has been progressive deterioration of the standards of that care to the serious detriment of the sick and needy.'"

Taking the long view, the *Austin Daily Herald* cites the approach of complete socialism.

"The compulsory health insurance plan is simply one of the planks in a platform that would create a total state. Lenin himself ranked socialization of medicine high among Communist objectives. And socialized medicine will come as surely as night follows day if we give the bureaucrats control over medical practice."

Warns of Wrong Route

The *Little Falls Daily Transcript* warns against the loss of present high quality medical care.

"With the exception of compulsory insurance plans, the developments in the field of medicine are taking place through the efforts of medical personnel and a forward-looking public. As plans for socialization of American medicine are advanced, we must look to the high calibre of present medical service and ask ourselves if we want to take chances with governmental control of this service in the future. Adequate medical atten-

tion for all is a goal toward which we must aim. But let us not take the wrong route."

American people are not helpless against the burden of sickness costs, declares the *Hibbing Daily Tribune*, despite:

"One of the basic implications in arguments on behalf of compulsory health insurance is that the bulk of the American people are almost totally incapable of dealing with illness when it strikes."

"That implication is not supported by the facts," asserts the *Tribune*, quoting enrollment figures from the voluntary prepayment plans. ". . . their (voluntary plans) growth is both steady and rapid, the cost is low, the extent of coverage has been substantially broadened, and they clearly provide the soundest approach yet devised to the problem of paying for medical attention."

Two Kinds of Patients

"Some authorities believe that the weakest link in the chain of medical care and national health is composed of two kinds of individuals," states the *Mankato Free Press*. "One kind is the fellow who is sure he is as healthy as a horse and has the constitution of one, and so he never sees a doctor from one year to the next. The other is the fellow who knows something is wrong, but does not go to a doctor because he scorns doctors or is afraid of them or afraid of what they might tell him. No program yet proposed seems to offer much hope of solving that problem."

The shooting-butterflies-with-a-shotgun method is scorned by the *Harmony News* which believes:

"There is a small percentage of the population which is actually indigent, and which cannot deal with the problems of illness without outside aid. But certainly, this group can be cared for without taxing the American people billions a year for a compulsory scheme for all—and without setting the stage for completely socialized medicine. It has been factually supported time and time again by the records made in various countries where regimented or socialized medicine has been tried, that *science does not flower in a political climate.*"

The *Fergus Falls Daily Journal* quotes doctors claim that:

". . . the system will result in complete demoralization in medicine in the course of time."

REGIONAL MEETING TO AID LOCAL HEALTH UNIT PLAN

Promoting the plan for full time health departments throughout the nation are regional meetings. Two have already taken place and one is scheduled for April 25, 26 and 27, in Omaha.

Five midwestern states met in Mitchell, Indiana, and five Rocky Mountain states at Salt Lake City. The Omaha session will include teams of ten from Minnesota, Iowa, Nebraska and North and South Dakota.

Sponsor of the meetings—the National Advisory Committee on Local Health Units—suggests that best results are obtained when the teams include representatives from the official health agency; the medical, nursing, dental and pharmaceutical professions: the civic organizations, such as the Parent-Teachers Association, the Federation of Women's Clubs, the Business and Professional Women's Clubs, the Lions, Kiwanis, Rotary; farm organizations such as the Grange, Farm Bureau, Farmers Union Cooperative; labor and industry—AF of L, CIO, Chamber of Commerce; the voluntary health agencies—tuberculosis and health associations, Cancer Society, American Red Cross, Infantile Paralysis Foundation and any other representative organizations.

The idea is to develop a nucleus within the state for promoting a public health program.

WHAT'S HAPPENING IN HEALTH EDUCATION?

St. Louis County has divided its health education program into five categories, beginning with an educational program for the Medical Society and Auxiliary. The speakers' bureau, organized under the direction of Dr. W. A. Coventry, has arranged for medical talks at all service clubs and almost all civic groups. Liaison with various organizations, many of them medically allied, is the third division of the program and, by this means, assistance has been given in obtaining and preparing direct-mail material. The doctors are also assisting lay persons in framing letters to their congressmen, protesting against the compulsory health insurance proposal. Newspaper and radio co-operation is being sought, with marked success, by the fifth division of the society. Local news commentators are using medical news and the newspapers have responded with what St. Louis county spokesmen describe as "excellent publicity."

Ramsey County Auxiliary is filling its niche in the state-wide Community Health Day schedule, April 21. The Ramsey County session, emphasizing women's health, health and behavior

problems of children, the community's role in improving health conditions, will be held in the theatre section of the Saint Paul Auditorium.

Stearns-Benton Medical Society has conducted a three-week series of medical broadcasts over Radio Station KFAM, St. Cloud. The Monday-Wednesday-Friday programs centered around such subjects as hospital costs and facilities and the doctors' connection with hospitals, the DP physician, local care for indigents, Blue Cross and Blue Shield and the Ewing, Brookings and Friedman reports. The concluding show was entitled "Would You Like To Become a Doctor?" Newspaper advertisements and radio spot announcements promoted the series which Medical Society members felt was highly successful.

TABLOID TO BRING HEALTH NEWS TO MINNESOTANS

Minnesota health standards rank high in a nation that holds the best health records in the world. Facts about Minnesota's health, the state's growing importance as a world medical center, advances made in the conquest of heart disease, cancer, and other diseases which rob the state of far too many citizens, information about the voluntary pre-payment systems for financing medical and hospital care are included. By statement and implication the fact is made clear that only where medical practice and research is free of governmental control could this progress against disease have been made.

The tabloid, an eight-page publication, will be distributed to 200,000 selected rural and industrial families in the state. Subsequent issues are planned for the year. Physicians will receive their copies with their regular monthly *Newsletter*.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

230 Lowry Medical Arts Building
Saint Paul, Minnesota

Julian F. DuBois, M.D., Secretary

Minneapolis Abortionist Ordered to Serve Four-year Prison Term

Re. State of Minnesota vs. Martin Peter Schmit, et al.

On March 17, 1949, Martin Peter Schmit, forty-nine years of age, 127 East 14th Street, Minneapolis, was sentenced by the Hon. William A. Anderson, Judge of the District Court of Hennepin County, to a term, not to exceed four years, at hard labor in the State Prison at Stillwater. The defendant had entered a plea of guilty on February 14, 1949, in Judge Anderson's Court, to information charging the defendant with the crime of abortion. Judge Anderson refused to place the defendant on probation and ordered him to serve the sentence.

Schmit was arrested on February 9, 1949, following an investigation made by the Minnesota State Board of Medical Examiners and the Minneapolis Police Department, into the circumstances surrounding a criminal abortion performed by the defendant on or about January 25, 1949, on a twenty-year-old, unmarried, Minneapolis girl. The patient became seriously ill and was hospitalized in a Minneapolis hospital. The patient stated that the abortion was performed by the defendant by means of a catheter and that the defendant was paid $200 for his services. Subsequent investigation disclosed that the defendant had performed numerous other abortions during the past year. The defendant at the time of being sentenced admitted that he had performed twenty-five abortions. He further stated that he charged from $50.00 to $200.00 for each abortion.

Schmit stated that he was born January 5, 1900, at Chamberlain, South Dakota; that he received his grade school education in Yellow Medicine County, Minnesota; that he subsequently worked as a mechanic, welder and salesman in Minnesota. Schmit admitted that he had no training in medicine or surgery and that he had no license to practice any form of healing in the state of Minnesota or anywhere else.

* * *

Minneapolis Tailor Sentenced on Abortion Charge

Re. State of Minnesota vs. Raymond P. Alberts.

On April 5, 1949, Raymond P. Alberts, forty-four years of age, residing at the Minnesotan Hotel, Minneapolis, was sentenced by the Hon. John A. Weeks, Judge of the District Court of Hennepin County, following the defendant's entering a plea of guilty on March 11, 1949, to an information charging him with the crime of abortion. The sentence imposed by the Court was "according to law." Judge Weeks suspended the sentence and placed the defendant on probation for five years. The defendant was arrested on March 5, 1949, following an investigation into an abortion performed on a twenty-four-year-old unmarried Minneapolis woman. The investigation disclosed that the abortion had been performed by the defendant by means of a catheter. There was no evidence that any consideration was paid for the abortion.

The defendant, at the time of his arrest, was employed as a tailor in a Minneapolis department store. Upon being questioned by the Court, Alberts stated that he was born at Fond du Lac, Wisconsin. The defendant admitted that he had three prior convictions for felonies, the first one in 1919, in the Circuit Court at Fond du Lac, Wisconsin, on a charge of rape. For that offense the defendant was sentenced to a ten-year term in the Wisconsin State Prison. After serving two and one-half years, the defendant was transferred to the Wisconsin State Reformatory at Green Bay. Upon being released, the defendant was convicted in November, 1926, in the Circuit Court of Milwaukee of the offense of grand larceny, and also of armed robbery. The defendant received a combined sentence of three to fifteen years for those two offenses. The defendant served until May 7, 1932, at which time he was released on parole. The Court stated to the defendant that he was giving him another opportunity to make good in view of the fact that there was no evidence that the defendant had violated any laws since his conviction in Milwaukee in 1926 up to the present case. Alberts admitted that he never studied medicine nor any of the other healing arts.

MINNESOTA STATE MEDICAL ASSOCIATION

Ninety-Sixth Annual Meeting

Saint Paul Auditorium, Saint Paul, Minnesota
May 9, 10 and 11, 1949

ANNOUNCEMENTS

Presiding officers at each session have been instructed by the Committee on Scientific Assembly to show a blue light on the speakers' rostrum two minutes before the end of each speakers' program time. A red light will show when his time is up.

REGISTER AND SECURE YOUR BADGE at the Registration Desk at the Saint Paul Auditorium at 8:00 A.M. Admittance will be by badge only. Arrangements have been made with the hospitals to admit interns and key hospital personnel as guests *if previously certified.* Out-of-state physicians can secure guest badges by presenting their membership cards from their local county and state medical societies.

TELEPHONE SERVICE: All physicians attending the Annual Meeting are reminded to tell their home and office secretary how they can be reached during their attendance in Saint Paul. Special incoming lines have been installed at the Auditorium Registration desk. All local and long distance calls will be handled promptly by directing calls to the Minnesota State Medical Association at the Saint Paul Auditorium—*Cedar 1374.*

BRING YOUR MEMBERSHIP CARD: There will be no registration fee for those who present a membership card or receipt or other evidence from their county society or the state association or the American Medical Association, nor for members of associated professions including dentists, pharmacists, interns, nurses, hospital personnel, teachers or social welfare workers who present invitations or other identification.

BADGES: You are requested to wear your badge while you are on the convention floor. This is important and will greatly assist us to eliminate undesirable persons such as cranks and pickpockets who so frequently try to take advantage of meetings of this character.

PARKING: Good parking space is available next to the Auditorium.

VISIT THE EXHIBITS: In keeping with established custom, forty-five minute recess periods have been provided each day, during which time those attending the Annual Meeting are urged to visit the scientific and technical exhibits. There is something of interest and education in the large exhibit of technical displays. Stop and show your appreciation of the exhibitors' support in helping to make successful the 1949 MSMA Convention.

SCIENTIFIC CINEMA: A full day's program of interesting medical motion pictures has been provided by the *Medical Film Guild* and will be shown in the *West Arena.* Detailed information on the films and the projection schedule will be found on page 10.

ROUND TABLE LUNCHEONS: A series of twenty-one Round Table Discussion Luncheons have been arranged for this meeting. One luncheon is scheduled for Monday; ten will be held on Tuesday, and ten on Wednesday. Tickets may be purchased in advance for these luncheons, all of which are held at 12:15 p.m. at either the Hotel Saint Paul or Hotel Lowry. Lists of subjects and leaders are printed in the program on pages 17 and 19 and on the reservation cards mailed with the program. Attendance at each luncheon is limited; latecomers are accommodated according to their choice if limits have not already been reached. Tickets $2.00, tips included.

MEDAL: The Southern Minnesota Medical Association will again award a medal to the individual physician presenting the outstanding scientific exhibit. The award will be made at the banquet Tuesday evening, May 10, at Hotel Saint Paul.

FIFTY CLUB: Tribute will be paid to those members who this year have completed fifty years of practice in Minnesota by election to Minnesota's "Fifty Club." Candidates will be honor guests at the Ninety-sixth Annual Banquet, 7:00 p.m. Tuesday, May 10, Hotel Saint Paul, and will be presented with lapel buttons and certificates at that time.

WOMAN'S AUXILIARY: Physicians' wives attending the meeting may secure programs for the business and social sessions of the Woman's Auxiliary at the Women's Registration Desk in the lobby of Hotel Saint Paul. All visiting women are cordially invited to attend the special events arranged by the hostesses of the Ramsey County Medical Auxiliary. Among these is a tea Monday afternoon at the Women's City Club of Saint Paul, and the Annual Meeting and Luncheon at 10:00 a.m. and 1:00 p.m., respectively, at the Minnesota Club.

SPECIAL SESSIONS

In addition to the general sessions to be held on Monday, Tuesday and Wednesday in the Auditorium Theater on the ground floor to the right of the exhibition hall, there will be *five* special section meetings in Stem Hall (to the right of the exhibition hall). These will be held during the morning of each of the three con-

vention days and Monday and Tuesday afternoons. Intermission periods will be observed from 10:15 a.m. to 11:00 a.m. and again from 3:15 p.m. to 4:00 p.m. at each session so that those who attend may visit exhibits, demonstrations and the scientific cinema.

Monday, May 9

A Symposium on Orthopedic and Fracture Surgery has been arranged for *9:00 a.m.* Monday in *Stem Hall.* The program is open to all convention visitors.

The Minnesota Chapter of the American College of Chest Physicians will hold a special session on chest diseases Monday afternoon beginning at *2:00* in *Stem Hall.*

Tuesday, May 10

A Special Symposium on Research Problems will be held on Tuesday morning at *9:00* in *Stem Hall.*

Two illustrated lectures will feature the special session in Stem Hall starting at 2:00 Tuesday afternoon.

Wednesday, May 11

The Minnesota Academy of Ophthalmology and Otolaryngology is sponsoring a special program at *9:00* in *Stem Hall.*

DEMONSTRATIONS

Obstetric Manikin Demonstrations: A discussion of delivery problems and technics, with the use of the manikin, provided through the courtesy of the Minnesota Department of Health will be incorporated as a part of special luncheons held on each of the three days of the Annual Meeting; and at 5:15 p.m. in *Stem Hall* at the Auditorium on Monday and Tuesday.

Demonstration on Oxygenation During Anesthesia will be presented by the Section on Anesthesiology, Mayo Clinic, before each morning and afternoon general and special session and during intermission periods in the Scientific Exhibit Section S-8.

Demonstration on the Therapy of Irradiated Plasma and Plasma Substitutes will be sponsored by the Committee on First Aid and Red Cross during intermission periods and before each morning and afternoon scientific session in S-9 in the Scientific Exhibit Section.

Demonstration on the Physics of Atomic Energy will be presented by the Council on Physical Medicine of the American Medical Association, before each morning and afternoon scientific session in S-13 in the Scientific Exhibit section, and during intermissions. By means of demonstrative apparatus and charts, the Geiger-Muller Counter will be explained. Demonstrations will show the use of instruments in medicine and allied sciences.

SCIENTIFIC CINEMA

(Courtesy of Joseph P. Hackel, Medical Film Guild, Ltd., New York City)

Monday, May 9
West Arena, Auditorium

A.M.
9:00 CHRONIC PURULENT OTITIS MEDIA
N.Y. Polyclinic Medical School and Hospital
9:53 CERVICITIS — DIAGNOSIS — ETIOLOGY — TREATMENT
Loyola University Medical School
10:45 HYPOTHYROIDISM — ETIOLOGY — DIAGNOSIS — TREATMENT
Massachusetts General Hospital
11:45 NON-OPERATIVE TREATMENT OF PARANASAL SINUSITIS
N.P. Polyclinic Medical School and Hospital

Intermission

P.M.
2:00 CERVICITIS — DIAGNOSIS — ETIOLOGY — TREATMENT
Loyola University Medical School
2:55 A MULTIPLE PERSONALITY (PSYCHIATRIC STUDY)
Columbia University
3:20 HYPOTHYROIDISM — ETIOLOGY — DIAGNOSIS — TREATMENT
Massachusetts General Hospital
4:13 OCCUPATIONAL HEALTH PROBLEMS
Assn. Industrial Physicians & Surgeons
5:05 *Requests*

Tuesday, May 10

A.M.
9:00 OCCUPATIONAL HEALTH PROBLEMS
Assn. Industrial Physicians & Surgeons
9:47 HYPOTHYROIDISM — ETIOLOGY — DIAGNOSIS — TREATMENT
Massachusetts General Hospital
10:34 A MULTIPLE PERSONALITY (PSYCHIATRIC STUDY)
Columbia University
10:59 CERVICITIS — DIAGNOSIS — ETIOLOGY — TREATMENT
Loyola University Medical School

Intermission

P.M.
2:00 NON-OPERATIVE TREATMENT OF PARANASAL SINUSITIS
N.Y. Polyclinic Medical School & Hospital
2:20 HYPOTHYROIDISM — ETIOLOGY — DIAGNOSIS — TREATMENT
Massachusetts General Hospital
3:13 CERVICITIS — DIAGNOSIS — ETIOLOGY — TREATMENT
Loyola University Medical School
4:08 CHRONIC PURULENT OTITIS MEDIA
N.Y. Polyclinic Medical School & Hospital
5:00 *Requests*

Wednesday, May 11

A.M.
9:00 CHRONIC PURULENT OTITIS MEDIA
N.Y. Polyclinic Medical School and Hospital
9:53 CERVICITIS — DIAGNOSIS — ETIOLOGY — TREATMENT
Loyola University Medical School
10:48 HYPOTHYROIDISM — ETIOLOGY — DIAGNOSIS — TREATMENT
Massachusetts General Hospital
11:45 NON-OPERATIVE TREATMENT OF PARANASAL SINUSITIS
N.Y. Polyclinic Medical School and Hospital

Intermission

P.M.

2:00 CERVICITIS — DIAGNOSIS — ETIOLOGY — TREATMENT
Loyola University Medical School

2:55 A MULTIPLE PERSONALITY (PSYCHIATRIC STUDY)
Columbia University

3:20 HYPOTHYROIDISM — ETIOLOGY — DIAGNOSIS — TREATMENT
Massachusetts General Hospital

4:13 OCCUPATIONAL HEALTH PROBLEMS
Assn. Industrial Physicians & Surgeons

5:05 *Requests*

GUEST SPEAKERS

We are indebted to the following societies and organizations for guest speakers at this meeting:

The Minnesota Academy of Ophthalmology and Otolaryngology—Speaker, RALPH O. RYCHENER, Associate Professor of Ophthalmology, College of Medicine University of Tennessee, Memphis.

The Minnesota Department of Health—Obstetric Manikin Demonstrators, HOWARD J. HOLLOWAY, Associate in Department of Obstetrics & Gynecology, Northwestern University Medical School, Evanston; and JOHN H. RANDALL, Professor of Obstetrics and Gynecology, College of Medicine State University of Iowa, Iowa City.

The Minnesota Radiological Society—Speaker, H. DABNEY KERR, Professor and Head of the Department of Radiology, College of Medicine State University of Iowa, Iowa City, who will deliver the annual *Russell D. Carman Memorial Lecture in Radiology.*

The Minnesota Society of Clinical Pathologists—Speaker, LEONARD W. LARSON, Bismarck, who will deliver the annual *Arthur H. Sanford Lectureship in Pathology.*

The National Foundation for Infantile Paralysis, Inc.—Speaker, ROBERT B. LAWSON, Department of Pediatrics, The Bowman Gray School of Medicine, Wake Forest College, Winston Salem, North Carolina.

The Northern Minnesota Medical Association—Speaker, CARL P. HUBER, Professor of Obstetrics and Gynecology, Indiana University School of Medicine, Indianapolis.

Other visiting speakers at this meeting:

RALPH E. CAMPBELL, Professor of Obstetrics and Gynecology, University of Wisconsin Medical School, Madison.

RONALD R. GREENE, Assistant Professor of Obstetrics and Gynecology, Northwestern University Medical School, Chicago.

LOUIS J. LIMARZI, Hematologist, University of Illinois College of Medicine, Chicago.

GUSTAF E. LINDSKOG, Professor of Surgery, Yale University School of Medicine, New Haven, Connecticut.

WALTER L. PALMER, Professor of Medicine, University of Chicago School of Medicine, Chicago.

ROY GLEN SPURLING, Senior Consultant in Neurosurgery to the Veterans Administration, Louisville, Kentucky.

SOCIAL EVENTS

Annual Banquet: The annual dinner for members, their wives and guests will be held at 7:00 p.m. Tuesday, May 10, in the *Continental Room* of *Hotel Saint Paul.* Ernest M. Hammes, St. Paul President of the Minnesota State Medical Association, and Colonel Jack Major, Paducah, Kentucky, will be banquet speakers. Tickets $4.00.

President's Reception: Dr. and Mrs. Ernest M. Hammes cordially invite all members of the Minnesota State Medical Association, their wives and convention guests to a Reception at the Minnesota Club from five to six-thirty o'clock immediately preceding the Banquet. Cocktails.

"Variety Night": All convention visitors and their wives will be guests of the Ramsey County Medical Society and the Minnesota State Medical Association for an evening of light comedy, music and dancing, Monday evening at 8:30 p.m. in the *Continental Room* of *Hotel Saint Paul.*

Medical Veterans of World War II will meet at a luncheon at 12:30 p.m. on Monday, May 9, in the Continental Room at Hotel Saint Paul. This is a good opportunity to meet the fellows again; let's make it One Hundred Per Cent (To quote Dr. A. N. Bessessen, Jr., President). Tickets may be secured at the registration desks. Make reservations in advance with Dr. A. N. Bessessen, Jr., 550 Medical Arts Bldg., Minneapolis 2.

Medical Women's Luncheon: Dr. Della Drips, Rochester, President, announces a luncheon meeting of the Medical Women's Association on Monday, May 9. Open to all visiting women doctors. Dr. Selma Mueller of Duluth is expected to talk on her medical service in the Orient. Make reservations in advance with Dr. Nellie N. Barsness, 540 Lowry Medical Arts Bldg., St. Paul 2.

Minneapolis General Hospital Surgical Residents Society will hold their annual dinner for members and wives at 7:00 p.m. on Sunday, May 8, at the University Club, 420 Summit Avenue, St. Paul. For reservations contact Ed Benjamin, 1727 Medical Arts Bldg., Minneapolis 2.

Minnesota Chapter, American College of Chest Physicians Luncheon: At noon, Monday, May 9, the Minnesota Chapter of the American College of Chest Physicians will hold a luncheon meeting in Room 334 of Hotel St. Paul at 12:15 p.m. Reservations should be made in advance with Dr. S. S. Cohen, Oak Terrace.

Minnesota Radiological Society will hold their annual dinner for members and wives at 6:00 p.m. on Monday, May 9, at the St. Paul Athletic Club, 340 Cedar Avenue. Guest speaker will be Dr. H. Debney Kerr of Iowa City, who will discuss "The Place of Radiation

Therapy in Intracranial Neoplasms." Reservations should be made in advance with Dr. Paul Medelman, 572 Lowry Medical Arts Bldg., St. Paul 2.

Minnesota Society of Clinical Pathologists will hold their annual dinner meeting for members and their wives on Wednesday evening, May 11. For reservations contact Dr. Kano Ikeda, Miller Hospital, 125 College Ave., W., St. Paul 2.

Nu Sigma Nu Reunion: The annual get-together of members of the Nu Sigma Nu Medical Fraternity will be held at the Minnesota Club, 317 Washington Street, St. Paul, on Monday, May 9. Cocktails from 5:00 to 7:00 p.m. For dinner reservations, kindly make reservations well in advance with Dr. Charles N. Hensel, 613 Lowry Medical Arts Bldg., St. Paul 2.

Phi Beta Pi Medical Fraternity Luncheon: All members of Phi Beta Pi Medical Fraternity are invited to attend a luncheon meeting at 12:15 p.m., Tuesday, May 10. Plans will be announced later and tickets will be on sale at the Registration Desk at the Auditorium. Arrangements in charge of Dr. B. G. Lannin, 1464 Lowry Medical Arts Bldg., St. Paul 2, and Dr. F. F. Wipperman, 1921 Medical Arts Bldg., Minneapolis 2.

SPORT EVENTS

Golf Tournament: The Annual Golf Tournament of the Minnesota State Medical Association will be held Sunday, May 8, at the *Town and Country Club, 2279 Marshall Avenue, St. Paul,* with tee-off at 11:00 a.m. All medical golfers are invited to enter and compete for the attractive prizes that have been donated. Victor P. Hauser, St. Paul, is tournament chairman.

Sport Event I: "Fifty-Bird Event Skeet Shoot" for Malcolm Pfunder Trophy, donated by Dr. Malcolm Pfunder of Minneapolis will be held from 10:00 a.m. to 4:00 p.m. on Sunday, May 8, at Minnesota State Fair Skeet Club—State Fair Grounds, St. Paul.

Sport Event II: Duck Hunters' Special "Razzle-Dazzle 25-Bird Event" for Leech Lake Trophy, donated by Dr. Vernon D. E. Smith.

BUSINESS SESSIONS

Hotel Lowry and Hotel Saint Paul

Saturday, May 7

2:00 P.M.—Council .....Room 234, Hotel Saint Paul
6:00 P.M.—Council .....Room 334, Hotel Saint Paul

Sunday, May 8

9:00 A.M.—Council .....Room 234, Hotel Saint Paul
9:30 A.M.—Reference Committees
.....Hotel Lowry
2:00 P.M.—House of Delegates .....
The Terrace, Hotel Lowry
6:00 P.M.—Council .....Room 334, Hotel Saint Paul
8:00 P.M.—House of Delegates .....
The Terrace, Hotel Lowry

Monday, May 9

8:00 A.M.—Council .....Room 234, Hotel Saint Paul
12:15 P.M.—House of Delegates .....
The Terrace, Hotel Lowry

Tuesday, May 10

8:00 A.M.—Council .....Room 234, Hotel Saint Paul

Wednesday, May 11

8:00 A.M.—Council .....Room 234, Hotel Saint Paul
9:00 A.M.—Installation of Officers .....
Auditorium Theater

COMMITTEE BREAKFAST MEETINGS

Hotel Lowry and Hotel Saint Paul

Monday, May 9

7:30 A.M.—Committee on First Aid and Red Cross ..
Sibley Room, Hotel Saint Paul
Committee on Tuberculosis .....
Room 334, Hotel Saint Paul

Tuesday, May 10

7:30 A.M.—Committee on Child Health .....
Capitol Room, Hotel Saint Paul
Diabetes Committee (Table 1) .....
Continental Room, Hotel Saint Paul
Editing and Publishing Committee .....
Windsor Room, Hotel Saint Paul
Heart Committee (Table 3) .....
Continental Room, Hotel Saint Paul
Historical Committee .....
Colonial Room, Hotel Lowry
Committee on Hospitals and Medical Education ..Ramsey Room, Hotel Lowry
Insurance Liaison Committee .....
University Room, Hotel Saint Paul
Committee on Maternal Health .....
Century Room, Hotel Lowry
Committee on Military Affairs .....
Sibley Room, Hotel Saint Paul
Committee on Rural Medical Service (Table 2) .....Continental Room, Hotel Saint Paul
Speakers Bureau (Table 4) .....
Continental Room, Hotel Saint Paul
Committee on State Health Relations ..
Silver Room, Hotel Lowry

Wednesday, May 11

7:30 A.M.—Committee on Cancer .....
Windsor Room, Hotel Saint Paul
Committee on Fractures .....
Ramsey Room, Hotel Lowry
Committee on Medical Service .....
Sibley Room, Hotel Saint Paul
Committee on Medical Testimony .....
University Room, Hotel Saint Paul
Committee on Ophthalmology .....
Colonial Room, Hotel Lowry
Committee on Public Policy .....
Capitol Room, Hotel Saint Paul
Committee on Veterans Medical Service ..
Century Room, Hotel Lowry

Scientific Program

Monday, May 9

SECTION I—GENERAL SESSION

A.M.

8:30 Demonstrations—S-8, S-9 and S-13
Visit Scientific and Technical Exhibits ..... Arena

9:00 Scientific Cinema—Medical Film Guild ..... West Arena

9:00 *Clinico-Pathological Conference* ..... Auditorium Theater
Subject: INTESTINAL OBSTRUCTION—J. Arnold Bargen, Rochester, Moderator
Roentgenological Aspects—Leo G. Rigler, Minneapolis
Differential Diagnosis—Walter L. Palmer, Professor of Medicine, University of Chicago, School of Medicine, Chicago, Illinois

10:15 *Intermission*
Scientific Cinema—Medical Film Guild ..... West Arena
Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13

11:00 MANAGEMENT OF INTESTINAL OBSTRUCTION ..... Auditorium Theater
Medical Aspects—Walter L. Palmer, Professor of Medicine, University of Chicago, School of Medicine, Chicago, Illinois
Surgical Aspects—Malcolm G. Gillespie, Duluth

P.M.

Afternoon

12:15 OBSTETRIC MANIKIN DEMONSTRATION ..... Fiesta Room, Hotel Lowry
John H. Randall, Professor of Obstetrics and Gynecology, State University of Iowa College of Medicine, Iowa City, Iowa

1:30 Visit Scientific and Technical Exhibits ..... Arena

1:30 Demonstrations—S-8, S-9 and S-13

2:00 Scientific Cinema—Medical Film Guild ..... West Arena

2:00 TRAUMA TO THE NERVOUS SYSTEM ..... Auditorium Theater
Ernest M. Hammes, Jr., Saint Paul, Moderator
Head Injuries—Leonard A. Titrud, Minneapolis
Spinal Cord Injuries—George S. Baker, Rochester
Peripheral Injuries—Roy Glen Spurling, Senior Consultant in Neurosurgery to the Veterans Administration, Louisville, Kentucky

3:15 *Intermission*
Scientific Cinema—Medical Film Guild ..... West Arena
Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13

4:00 RUSSELL D. CARMAN MEMORIAL LECTURE ..... Auditorium Theater
Roentgen Diagnosis of Lesions of the Urinary Tract—H. Dabney Kerr, Professor and Head of the Department of Radiology, State University of Iowa, College of Medicine, Iowa City, Iowa
Presentation of Speaker: John D. Camp, Rochester, President, Minnesota Radiological Society

5:00 Scientific Cinema—Medical Film Guild ..... West Arena
Visit Scientific and Technical Exhibits ..... Arena

5:15 OBSTETRIC MANIKIN DEMONSTRATION ..... Stem Hall
John H. Randall, Professor of Obstetrics and Gynecology, State University of Iowa, College of Medicine, Iowa City, Iowa

8:30 "VARIETY NIGHT" ..... Continental Room, Hotel Saint Paul

Monday, May 9

SECTION II—SPECIAL SESSION

A.M.

9:00 ORTHOPEDIC AND FRACTURE SURGERY ..... Stem Hall
Wallace Cole, Saint Paul, Chairman
Slipping of the Upper Femoral Epiphysis—Stewart W. Shimonek, Saint Paul

9:15 *Carpal Injuries*—Malvin J. Nydahl, Minneapolis

9:30 *Delayed Primary Closure of Wounds*—Frank S. Babb, Saint Paul

9:45 *Orthopedic Aspects of Poliomyelitis*—John F. Pohl, Minneapolis

10:00 *Fractures of the Femoral Shaft*—Harry B. Hall, Minneapolis

10:15 *Intermission*
Scientific Cinema—Medical Film Guild ..... West Arena
Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13

11:00 ORTHOPEDIC AND FRACTURE SURGERY (Continued) ..... Stem Hall
Fractures of the Spine—John C. Ivins, Rochester
11:15 *Carpo-navicular Injuries*—Carl G. Caspers, Minneapolis
11:30 *Fractures of the Forearm*—Richard E. Reiley, Minneapolis
11:45 *Congenital Dislocations of the Hip*—Vernon L. Hart, Minneapolis (Motion picture)

P.M. *Afternoon*
12:15 OBSTETRIC MANIKIN DEMONSTRATION ..... Fiesta Room, Hotel Lowry
John H. Randall, Professor of Obstetrics and Gynecology, State University of Iowa, College of Medicine, Iowa City, Iowa
1:30 Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13
2:00 Scientific Cinema ..... West Arena
2:00 MINNESOTA CHAPTER OF THE AMERICAN COLLEGE OF CHEST PHYSICIANS .... Stem Hall
Karl H. Pfuetze, Cannon Falls, Chairman
Cytologic Examination of Sputum as an Aid in the Diagnosis of Bronchogenic Carcinoma—John R. McDonald, Rochester
Discussion: Kano Ikeda, Saint Paul—DeForest R. Hastings, Minneapolis
2:30 *Diagnosis and Treatment of Common Forms of Respiratory Allergy*—Fred W. Wittich, Minneapolis
Discussion: Leo G. Rigler, Minneapolis—George C. Roth, Saint Paul

3:15 *Intermission*
Scientific Cinema—Medical Film Guild ..... West Arena
Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13
4:00 CHEST PHYSICIANS (Continued) ..... Stem Hall
Reversible Forms of Heart Disease—John F. Briggs, Saint Paul
Discussion: Richard L. Varco, Minneapolis—Joseph F. Borg, Saint Paul
4:30 *Differential Diagnosis of Pulmonary X-Ray Shadows*—Hilbert Mark, Minneapolis
Discussion: Gust A. Hedberg, Nopeming—Sumner S. Cohen, Oak Terrace
5:00 Scientific Cinema—Medical Film Guild ..... West Arena
Visit Scientific and Technical Exhibits ..... Arena
5:15 OBSTETRIC MANIKIN DEMONSTRATION ..... Stem Hall
John H. Randall, Professor of Obstetrics and Gynecology, State University of Iowa, College of Medicine, Iowa City, Iowa

8:30 "VARIETY NIGHT" ..... Continental Room, Hotel Saint Paul

All convention visitors and their wives will be guests of the Ramsey County Medical Society and the Minnesota State Medical Association for an evening of light comedy, music and dancing, Monday, at 8:30 p.m. featuring
The Atomic Bums—Noted Barbershop Quartet
Episodes in the Life of a Doctor's Wife—Hennepin County Medical Auxiliary
Dancing to the Music of the *Imperials*
Light refreshments will be available during the dancing in the Continental Room.

Everybody is invited to attend.

Tuesday, May 10

SECTION I—GENERAL SESSION

A.M.
8:30 Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13
9:00 Scientific Cinema—Medical Film Guild ..... West Arena
9:00 CLINICO-PATHOLOGICAL CONFERENCE ..... Auditorium Theater
Subject: DISEASES OF THE THORAX
John F. Briggs, Saint Paul, Moderator
Roentgenological Aspects—Walter H. Ude, Minneapolis
Differential Diagnosis—Gustaf E. Lindskog, Professor of Surgery, Yale University School of Medicine, New Haven, Connecticut

10:15 *Intermission*
Scientific Cinema—Medical Film Guild ..... West Arena
Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13
11:00 MANAGEMENT OF DISEASES OF THE THORAX ..... Auditorium Theater
Anesthesiological Aspects—Joe William Baird, Minneapolis
Surgical Aspects—Gustaf E. Lindskog, Professor of Surgery, Yale University School of Medicine, New Haven, Connecticut

P.M. *Afternoon*

12:15 OBSTETRIC MANIKIN DEMONSTRATION .....Fiesta Room, Hotel Lowry
Howard J. Holloway, Associate in the Department of Obstetrics and Gynecology, Northwestern University Medical School, Evanston, Illinois

12:15 ROUND TABLE LUNCHEONS

1:30 Visit Scientific and Technical Exhibits .....Arena
Demonstrations—S-8, S-9 and S-13

2:00 Scientific Cinema—Medical Film Guild .....West Arena

2:00 A REVIEW OF CURRENT MANAGEMENT OF THE BLOOD DYSCRASIAS ..Auditorium Theater
Frank J. Heck, Rochester, Moderator
John J. Boehrer, Jr., Minneapolis
Dorothy Sundberg, Minneapolis
Louis J. Limarzi, Hematologist, University of Illinois, College of Medicine, Chicago, Illinois

3:15 *Intermission*

Scientific Cinema—Medical Film Guild .....West Arena
Visit Scientific and Technical Exhibits .....Arena
Demonstrations—S-8, S-9 and S-13

4:00 THERAPEUTIC PROBLEMS ENCOUNTERED IN ACUTE POLIOMYELITIS ..Auditorium Theater
Robert B. Lawson, Department of Pediatrics, The Bowman Gray School of Medicine, Wake Forest College, Winston-Salem, North Carolina
Presentation of Speaker: Elizabeth C. Lowry, Minneapolis, Secretary Northwestern Pediatrics Society

5:00 Scientific Cinema—Medical Film Guild .....West Arena
Visit Scientific and Technical Exhibits .....Arena

5:15 OBSTETRIC MANIKIN DEMONSTRATION .....Stem Hall
Howard J. Holloway, Associate in the Department of Obstetrics and Gynecology, Northwestern University Medical School, Evanston, Illinois

5:00 PRESIDENT'S RECEPTION .....The Minnesota Club
Dr. and Mrs. Ernest M. Hammes cordially invite all members of the Minnesota State Medical Association, their wives and convention guests to a Reception at the Minnesota Club from five to sixty-thirty o'clock. Cocktails.

7:00 ANNUAL BANQUET .....Continental Room, Hotel Saint Paul

Tuesday, May 10

SECTION II—SPECIAL SESSION

A.M.

9:00 SYMPOSIUM ON RESEARCH PROBLEMS .....Stem Hall
James T. Priestley, Rochester, Chairman
Needle Biopsy of the Liver—Maurice H. Stauffer, Rochester

9:15 *The Occurrence of a Gastric Secretory Inhibitor in Gastric Mucin*—Henry V. Ratke, Rochester

9:30 *Cytologic Examination of Smears in the Diagnosis of Cancer of the Esophagus and Cardia of the Stomach*—Howard A. Anderson, Rochester

9:45 *Experimental Studies on Gastric Carcinogenesis*—Claude R. Hitchcock, Minneapolis

10:00 *Studies on External Pancreatic Secretion in Dogs with Chronic Pancreatic Fistula, with Emphasis on the Effects of Vagotomy*—Eric F. Routley, Rochester

10:15 *Intermission*

11:00 RESEARCH PROBLEMS (Continued) .....Stem Hall
Cyanosis—Its Production and Effects—Timothy Takaro, Rochester

11:15 *Experimental Considerations in Restoration of Continuity of Superior Mesenteric Vessels*—Loren E. Nelson, Minneapolis

11:30 *The Dietary Treatment of Hypertension*—Carleton B. Chapman, Minneapolis

11:45 *The Treatment of Leukemia and Polycythemia*—Howard L. Horns, Minneapolis

P.M. *Afternoon*

12:15 OBSTETRIC MANIKIN DEMONSTRATION .....Fiesta Room, Hotel Lowry
Howard J. Holloway, Associate in the Department of Obstetrics and Gynecology, Northwestern University Medical School, Evanston, Illinois

12:15 ROUND TABLE LUNCHEONS .....Meeting Halls to be assigned. Hotel Lowry and Hotel Saint Paul
Laboratory Procedures in General Practice—Ellery M. James, Minneapolis
Fractures of the Elbow—S. Sverre Houkom, Duluth
Skin Diseases—Elmer T. Ceder, Minneapolis
Questions and Answers Concerning (1) Diagnosis and Treatment Hydronephrosis (2) Management of Vesical Neck Obstruction—Frederic E. B. Foley
Cancer of the Digestive Tract—Royal V. Sherman, Red Wing
Rheumatic Heart Disease—Charles N. McCloud, Jr., Saint Paul
Diabetes—Johannes K. Moen, Minneapolis
Hyperthyroidism—Samuel F. Haines, Rochester
Coronary Disease—Daniel W. Wheeler, Duluth

2:00 USE OF RECTUS SHEATH AND SUPERIOR PUBIC LIGAMENT IN DIRECT INGUINAL HERNIA .....Stem Hall, Auditorium
Illustrated Lecture: Hamlin Mattson, Minneapolis

2:20 SPINAL INVOLVEMENT IN POLIOMYELITIS .....Stem Hall, Auditorium
Illustrated Lecture: Frederic J. Kottke, Minneapolis

3:15 *Intermission*
Scientific Cinema—Medical Film Guild .....West Arena
Visit Scientific and Technical Exhibits .....Arena
Demonstrations—S-8, S-9 and S-13

5:15 OBSTETRIC MANIKIN DEMONSTRATION .....Stem Hall
Howard J. Holloway, Associate in the Department of Obstetrics and Gynecology, Northwestern University Medical School, Evanston, Illinois

5:00 PRESIDENT'S RECEPTION .....The Minnesota Club

7:00 ANNUAL BANQUET .....Continental Room, Hotel Saint Paul
Presiding: John R. Aurelius, Saint Paul, President, Ramsey County Medical Society
Introduction of Mrs. Henry E. Bakkila, Duluth, President, Woman's Auxiliary
Presentation of Fifty Club Certificates
Presentation of Southern Minnesota Medical Association Medal
Presentation of Distinguished Service Medal
"The Minnesota Centennial—Its Medical History"—Ernest M. Hammes, Saint Paul, President, Minnesota State Medical Association
"Taxes Women and Hogs"—Colonel Jack Major, Paducah, Kentucky

Wednesday, May 11

SECTION I—GENERAL SESSION

A.M.

8:30 Visit Scientific and Technical Exhibits .....Arena
Demonstrations—S-8, S-9 and S-13

9:00 Scientific Cinema—Medical Film Guild .....West Arena

9:00 CLINICO-PATHOLOGICAL CONFERENCE .....Auditorium Theater
Subject: ENDOMETRIOSIS
Claude J. Ehrenberg, Minneapolis, Moderator
Theory of Causes and Hormonal Aspects—Ronald R. Greene, Assistant Professor of Obstetrics and Gynecology, Northwestern University Medical School, Chicago, Illinois
Pathological Aspects—Malcolm B. Dockerty, Mayo Clinic, Rochester

10:15 *Intermission*
Scientific Cinema—Medical Film Guild .....West Arena
Visit Scientific and Technical Exhibits .....Arena
Demonstrations—S-8, S-9 and S-13

11:00 MANAGEMENT OF ENDOMETRIOSIS .....Auditorium Theater
Clinical Aspects—Carl P. Huber, Professor of Obstetrics and Gynecology, Indiana University School of Medicine, Indianapolis, Indiana
Surgical Aspects—Ralph E. Campbell, Professor of Obstetrics and Gynecology, University of Wisconsin Medical School, Madison, Wisconsin

P.M. *Afternoon*

12:15 OBSTETRIC MANIKIN DEMONSTRATION .....Fiesta Room, Hotel Lowry
John A. Haugen, Minneapolis

12:15 ROUND TABLE LUNCHEONS

1:30 Visit Scientific and Technical Exhibits .....Arena
Demonstrations—S-8, S-9 and S-13

2:00 Scientific Cinema—Medical Film Guild .....West Arena

2:00 MANUAL ROTATION OF OCCIPUT-POSTERIOR PRESENTATIONS .....Auditorium Theater
Howard J. Holloway, Associate in the Department of Obstetrics and Gynecology, Northwestern University Medical School, Evanston, Illinois

3:00 ARTHUR H. SANFORD LECTURESHIP IN PATHOLOGY .....Auditorium Theater
The Relation of the Pathologist to the General Practitioner—Leonard W. Larson, Bismarck, North Dakota, Former President of the American Society of Clinical Pathologists
Presentation of Speaker: Robert Hebbel, President, Minnesota Society of Clinical Pathologists

Wednesday, May 11

SECTION II—SPECIAL SESSION

A.M.

9:00 MINNESOTA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY .....Stem Hall
Avery De H. Prangen, Rochester, Chairman
Management and Treatment of Congenital and Adult Dacrocystitis—Ralph O. Rychener, Associate Professor of Ophthalmology, University of Tennessee College of Medicine, Memphis, Tennessee

10:15 *Intermission*
Scientific Cinema—Medical Film Guild ..... West Arena
Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13

11:00 MINNESOTA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY (Continued) ..... Stem Hall
Osteoma of the Paranasal Sinuses—Olav E. Hallberg, Rochester—Joseph W. Begley, Jr., Rochester

P.M. *Afternoon*
12:15 OBSTETRIC MANIKIN DEMONSTRATION ..... Fiesta Room, Hotel Lowry
John A. Haugen, Minneapolis

12:15 ROUND TABLE LUNCHEONS—Meeting Halls to be assigned. ..... Hotel Lowry and Hotel Saint Paul
Skin Grafts—N. Logan Leven, Saint Paul
Hypertension—Frank J. Hirschboeck, Duluth
Peripheral Vascular Disease—John C. Hays, Saint Paul
Treatment of the Cervix—Wilford J. Deweese, Bemidji
Headaches—Walter P. Gardner, Saint Paul
Radioactive Isotopes—Charles F. Stroebel, Rochester
Emergency Ear, Nose and Throat Conditions—Kenneth A. Phelps, Minneapolis
Diverticulitis—John M. Waugh, Rochester
Office Procedures in Rectal Diseases—James K. Anderson, Minneapolis
Visit Scientific and Technical Exhibits ..... Arena

1:30 Demonstrations—S-8, S-9 and S-13

SAINT PAUL

1949 Convention City

The skyline of Saint Paul

✦ Reports and Announcements ✦

MEDICAL BROADCASTS

The subjects for health talks by Dr. Robert N. Barr, Minnesota Department of Health, from Station KUOM, Minneapolis-St. Paul, on Monday mornings at 11:15 during April and May, will be as follows:

April 4 .....Safe and unsafe water supplies
April 11 .....What can we do about cancer?
April 18.....Tuberculosis can be wiped out
April 25 .....Motherhood is safe today
May 2 .....Health for all our children
May 9 .....Minnesota's new hospitals
May 16 .....Why we need local health services
May 23 .....Accidents don't "happen"
May 30.....Health gains since the Civil War

AMERICAN ACADEMY OF NEUROLOGY

Announcement has been received of the establishment of the American Academy of Neurology, whose purpose it is to further and encourage the practice of clinical neurology and to stimulate teaching and research in neurology and allied sciences.

Active Membership in the Academy is open to every physician who has been certified in neurology or in both neurology and psychiatry. Junior Membership is available to physicians presently engaged in postgraduate studies in neurology or who are awaiting certification in neurology. In addition, there is an Associate Membership for those who are not certified in neurology but whose interests are in fields related to neurology. It is hoped that because of the unrestricted membership, this association will be representative of the entire neurological specialty and will offer an organ of expression for many of the younger men in the field. The American Academy of Neurology at present has 500 members. The first business meeting was held in Chicago in June, 1948.

The first scientific meeting will be held at the French Lick Springs Hotel, French Lick Springs, Indiana, on Wednesday, Thursday, and Friday, June 1, 2, and 3, 1949. Dr. Dave B. Ruskin of the Caro State Hospital, Caro, Michigan, is in charge of the scientific program.

The present executive council consists of Dr. A. B. Baker, Minneapolis, president; Dr. Pearce Bailey, Washington, D. C., vice president; Dr. Joe R. Brown, Minneapolis, secretary-treasurer; Dr. Frederic Lewey, Philadelphia, Dr. William A. Smith, Atlanta, Dr. J. M. Nielsen, Los Angeles, and Dr. A. L. Sahs, Iowa, Board of Trustees. Communications to the Academy should be addressed to Dr. Joe R. Brown, 19 Millard Hall, University of Minnesota, Minneapolis 14, Minnesota.

AMERICAN ASSOCIATION OF RAILWAY SURGEONS

The Sixty-First Annual Meeting of the American Association of Railway Surgeons will be held at the Drake Hotel, Chicago, Illinois, on June 30—July 2, 1949.

An exceptionally interesting and instructive scientific program has been arranged: The morning sessions will include twelve papers on various medical and surgical subjects, given by outstanding authorities. The two afternoon sessions will be devoted to symposia on "Lesions of the Bones and Joints" and "Intra-thoracic Disorders."

There will be a technical exhibit in conjunction with the scientific meetings.

The annual dinner will be held at the Drake Hotel on Friday evening, July 1, 1949.

Room reservations may be made at the Drake Hotel or at the nearby Knickerbocker Hotel.

AMERICAN BOARD OF PREVENTIVE MEDICINE AND PUBLIC HEALTH

Another specialty board, the American Board of Preventive Medicine and Public Health, approved by the Advisory Board for Medical Specialties and by the Council on Medical Education and Hospitals of the AMA, has been established and is prepared to accept applications for examinations for certification in this specialty.

In addition to the possession of an M.D. degree and a license to practice medicine, applicants must have had special training and experience in preventive medicine and public health for six years following internship.

Provision in the membership rôle has been made for a Founders Group to be composed of those who have held positions of eminence and responsibility in the field for ten years or more. No examinations will be required for Founder membership.

Further details regarding membership may be obtained from Dr. Ernest L. Stebbins, Secretary, 615 North Wolfe Street, Baltimore 5, Maryland.

AMERICAN COLLEGE OF CHEST PHYSICIANS

The Board of Examiners of the American College of Chest Physicians announces that the next oral and written examinations for Fellowship will be held in Atlantic City, June 2, 1949. Candidates for Fellowship in the College who would like to take the examinations should contact the Executive Secretary, American College of Chest Physicians, 500 North Dearborn Street, Chicago 10, Illinois.

The fifteenth annual meeting of the American College of Chest Physicians will be held at the Ambassador Hotel, Atlantic City, June 2-5, 1949. An interesting scientific program has been arranged for this meeting, and speakers from several other countries are scheduled to appear.

THE AMERICAN CONGRESS OF PHYSICAL MEDICINE

The American Congress of Physical Medicine will hold its twenty-seventh annual scientific and clinical session September 6, 7, 8, 9 and 10, 1949, inclusive, at the Netherland Plaza Hotel, Cincinnati, Ohio. Scientific and

(Continued on Page 418)

AMERICAN CONGRESS OF PHYSICAL MEDICINE

(Continued from Page 416)

clinical sessions will be given on the days of September 6, 7, 8, 9 and 10, 1949. All sessions will be open to members of the medical profession in good standing with the American Medical Association.

In addition to the scientific sessions, the annual instruction courses will be held September 6, 7, 8 and 9. These courses will be offered in two groups. One set of ten lectures will consist of basic subjects and attendance will be limited to physicians. One set of ten lectures will be more general in character and will be open to physicians as well as to physical therapy technicians who are registered with the American Registry of Physical Therapy Technicians.

Full information may be obtained by writing to the American Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 2, Illinois.

COOK COUNTY GRADUATE SCHOOL OF MEDICINE

The Cook County Graduate School of Medicine of Chicago has arranged two courses that will be of special interest to some of the members of the Minnesota State Medical Association.

A two weeks' intensive personal course in the "Diagnosis and Treatment of Congenital Malformations of the Heart" will be offered by Benjamin M. Gasul, M.D., starting Monday, June 13.

A two weeks' intensive personal course in "Cerebral Palsy" will be offered by M. A. Perlstein, M.D., starting Monday, August 1.

Dr. Gasul and Dr. Peterson are members of the attending staff of the Cook County Hospital.

NORTHWESTERN MEDICAL ASSOCIATION

An organization of skiing physicians, the first of its kind in the world, has been formed at Sun Valley.

A group of forty-five medical men from all parts of the United States, many of them outstanding in their specialties, have banded together under the name of the Northwestern Medical Association, primarily to study winter sports from the medical viewpoint. They will meet each year at Sun Valley.

Devoted to the study of skiing safety, snow blindness, high altitude and winter diseases, the physicians came together at first socially. This year, under the leadership of Dr. L. Henry Garland, San Francisco, they organized for extracurricular study.

Dr. Vern D. Smith, of St. Paul, was named secretary-treasurer at the first meeting, and Dr. John Hochfilzer, also of St. Paul, was elected to the executive committee.

The major function of the group will be that of an advisory council, and recommendations will be made in connection with all safety aspects of skiing. Dentists and allied scientists are associated members.

Dr. Richard H. Hempstead, of Rochester, is among the three Minnesota physicians who are charter members of the group.

MINNESOTA SOCIETY OF NEUROLOGY AND PSYCHIATRY

At the March meeting of the Minnesota Society of Neurology and Psychiatry, held at the Town and Country Club, St. Paul, Dr. Roger W. Howell, Minneapolis, lectured on "Manic Depressive Reactions." Dr. Joe R. Brown, also of Minneapolis, spoke on "The Treatment of Cerebellar Ataxia"; and Dr. J. C. Michael spoke on "Psychiatry and Law; one recent experience."

KENNY FOUNDATION AND INSTITUTE

Dr. E. J. Huenekens, chief of staff at Sister Elizabeth Kenny Institute and clinical professor of pediatrics at University of Minnesota, has been appointed national medical director of the Kenny Foundation, it has been announced by Donald C. Dayton, Foundation president.

In his new position with the Foundation, Dr. Huenekens will be in contact with medical leaders throughout the country with the aim of creating broader understanding of the Kenny concept and treatment of poliomyelitis.

Mr. Dayton also announced that Dr. Wallace H. Cole of St. Paul, director of the division of orthopedic surgery of University of Minnesota medical school, has accepted the position of consulting orthopedist on the Kenny Institute staff.

Dr. Cole was one of three medical men who originally observed the work of Sister Kenny when she first came to Minneapolis in 1940, and his announced affiliation with the Institute renews close association with the other two, who are presently members of the staff.

They are Dr. Miland E. Knapp, chief of physical medicine in charge of training and treatment, and Dr. John F. Pohl, orthopedic consultant.

Dr. Knapp is a former president of the American Congress of Physical Medicine and former chief of staff at St. Barnabas Hospital. He is associate clinical professor of physical medicine at University of Minnesota.

Dr. Pohl is former medical supervisor at Kenny Institute.

FUNDS FOR MEDICAL RESEARCH BEQUEATHED TO UNIVERSITY OF MINNESOTA

The University of Minnesota has been named recipient of a gift of approximately one-half million dollars which is to be used for medical research. The gift comes from the estate of Mr. Silas McClure, a Minneapolis businessman who died February 16, at the age of eighty-three. Previously Mr. McClure granted funds to the University in memory of his wife, Katherine Esgen McClure.

President J. L. Morrill, expressing the University's gratitude, said, "The very generous bequest provided by Mr. Silas McClure is further evidence of the general acceptance of the high professional competence of University scientists. The University is profoundly grateful."

Dr. Harold S. Diehl, dean of medical sciences at the University, said further, "Medical and health problems of vital importance need intensive study. The facilities for such studies will be provided by the Mayo Memorial and the Variety Club Heart Hospital. . . . An unrestricted fund for medical research, such as Mr. McClure has made available, will be particularly valuable. It can be

(Continued on Page 420)

FUNDS FOR MEDICAL RESEARCH

(Continued from Page 418)

used for the purchase of needed scientific equipment or to provide the technical assistance and supplies. . . . Mr. McClure's generous bequest will be used to underwrite such prospecting in better health for the people, not only of Minnesota but of the world."

CONTINUATION COURSES AT MINNESOTA

The Department of Postgraduate Medical Education, University of Minnesota, announces a continuation course in Surgery for general physicians to be held at the Center for Continuation Study May 9-10-11. The course will be made up of symposia on the following subjects: varicose veins, diagnosis and management of thrombophlebitis and phlebothrombosis, diagnosis in urological conditions and a clinic on fractures.

A continuation course in General Medicine will be held at the Center for Continuation Study May 12-13-14. The course will be devoted to lectures and clinics on Hematology and Allergy. Particular emphasis will be placed on methods of diagnosis and treatment of the various allergic states.

A continuation course in Dermatology for general physicians is scheduled at the Center for Continuation Study for May 26 and 27. The course will be devoted to the diagnosis and management of the common skin disorders.

NATIONAL SOCIETY FOR CRIPPLED CHILDREN AND ADULTS

The annual convention of the National Society for Crippled Children and Adults will be held November 7, 8 and 9 at the Commodore Hotel, New York, according to an announcement made from Chicago headquarters by Lawrence J. Linck, executive director.

Prominent authorities working in the field of the handicapped will present latest developments at the three-day session marking twenty-eight years of service for the Society.

Delegates from 2,000 state and local affiliates of the National Society will discuss research, rehabilitation, training and treatment for the handicapped.

NU SIGMA NU BANQUET

The annual banquet of Nu Sigma Nu medical fraternity will be held Saturday, April 30, 1949, at the Minnesota Club in Saint Paul. Cocktails will be served at 5:30 o'clock, with dinner at 7:30 sharp.

Dr. Stewart Graves, executive secretary of Nu Sigma Nu and dean of the Medical School of the University of Alabama, Tuscaloosa, will be guest of honor. Dr. Archie Beard, Minneapolis, member of the National Board, will also be present. A brief report on the activities of alumni will be given by Dr. Wm. A. Hanson, Minneapolis, and on the activities of the local Active chapter by Dick Sells. Dr. Graves will give a brief address.

A room has been reserved for those who wish to remain following the dinner to play cards.

Reservations should be made by April 26 through Dr. Charles N. Hensel, 613 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota. Check for tickets, at $7.50, should accompany request for reservation.

HENNEPIN COUNTY MEDICAL SOCIETY

At the regular March meeting, members of the Hennepin County Medical Society took an affirmative vote on the AMA assessment plan. Dr. Ralph Creighton, acting chairman of the Board of Directors, and Mr. Thomas P. Cook, newly elected executive secretary, spoke before the group.

NORTHERN MINNESOTA MEDICAL ASSOCIATION

A preliminary meeting of the Northern Minnesota Medical Association was held recently in Alexandria where an outline was planned for a meeting to be held on September 9 and 10, 1949, in the city of Alexandria. A general program committee was selected, tentatively including Dr. C. L. Oppegaard of Crookston, Minnesota, Mr. C. C. Carlson of Alexandria, Minnesota, Dr. Clarence Jacobson of Chisholm and Dr. W. B. Coventry of Duluth. Dr. L. F. Wassom of Alexandria is the general chairman in charge of local arrangements.

The twenty-ninth annual meeting will have a varied program of interest to the general practitioner, covering the fields of general medicine, general surgery, obstetrics, gynecology and specialties. An evening banquet on September 9, 1949, will feature a noted guest speaker. The Park Region Medical Society is host, and it is expected that this will be an unusually interesting meeting.

RAMSEY COUNTY MEDICAL SOCIETY

Two hundred fifty physicians attended the monthly meeting of the Ramsey County Medical Society which took place on the last day of February. Discussion that evening was concerned with the compulsory health insurance plan, the AMA $25 assessment and educational plan, and the Oscar Ewing Report. Five physicians spoke to the group: Dr. B. B. Souster, Dr. Ernest M. Hammes, president of the Minnesota State Medical Association, Dr. George Earl, Dr. Olof I. Sohlberg, and Dr. E. J. Fogelberg, all of St. Paul.

ST. LOUIS COUNTY MEDICAL SOCIETY

At the regular monthly meeting of the St. Louis County Medical Society held on March 10 at St. Mary's Hospital, Duluth, the attending physicians voted approval of the AMA 12-point medical and public health advancement program. Speaking to the gathering was Dr. A. O. Swenson who favors the voluntary health programs. Citing statistics, he said that some 52,000,000 Americans are now members of privately owned health insurance groups, and that the public can look forward to better coverage as memberships grow.

PHYSICIAN-ARTISTS, BEWARE!

Those planning to exhibit at the Atlantic City Exhibition (American Medical Association, June 6-10, 1949) are requested to note that—NOW is the time to write for entry blanks, rules, shipping labels, et cetera.

Haste is necessary, because entries must reach Atlantic City between April 15 and May 9.

For details, write airmail to Francis H. Redewill, M.D., Secretary, American Physicians Art Association, Flood Building, San Francisco, California.

Woman's Auxiliary

SECOND SOUTHWESTERN HEALTH DAY DRAWS 1,200

Mrs. W. G. Benjamin

The second Southwestern Minnesota Health Day program was held in Pipestone at the High School Auditorium, February 22, and was one of the most outstanding health events ever held in this city or in southwestern Minnesota. More than 1,200 people gathered to hear eminent physicians and educators discuss some of the more important local health problems of today.

Since the first Health Day, which was held at Worthington in February last year, there have been five such events throughout the state at Willmar, Fergus Falls, Crookston, Mankato and Duluth.

Health Day programs are presented as a means of creating interest among the people of the state in common health problems and educating them in ways of improving personal and public health conditions. Physicians and educators have been willing to give liberally of their time and talent in promoting these projects. Interest was activated in this district by having some 200 organizations in the eight counties (Pipestone, Rock, Murray, Nobles, Cottonwood, Jackson, Lyon and Lincoln) co-sponsor Health Day, each organization giving suggestions for the program, and having a representative on the organization committee.

Many of the speakers at the meeting suggested the extension of local health services as a means of promoting better health conditions in the community. They also urged the formation of district mental health facilities and county health councils. They pointed out that these objectives may be accomplished only when all the people in a community become interested and work together for a common cause.

Twenty educational health booths and exhibits were a new and interesting feature of this Health Day. Trained personnel, representing the various health groups in the state, presented educational exhibits, showed health movies, dispensed literature, and were on hand to give information to the visitors.

The program began at nine o'clock with the local Auxiliary members acting as hostesses and nine high school students assisting with registration. Mrs. Walter G. Benjamin, Southwestern Minnesota Auxiliary president, gave the address of welcome. More than 600 people attended the morning session on mental health.

During the noon hour, through the courtesy of the city of Pipestone, a free lunch was served to all who were present.

The afternoon program opened with a panel on safety. This was followed by another panel on "Trouble Shooting Your Health Problems," and closed with the showing of health movies.

The evening session opened with a short concert by the Pipestone High School band. Mrs. Harold Wahlquist of Minneapolis, state president of the Woman's Auxiliary, gave a review of Health Days, for which she was well qualified, having been present at all the Health Day programs. Dr. Henry F. Helmholz, of the Mayo Clinic, of Rochester, was the principal speaker on the evening program. He told of existing conditions, and what is being done for the children in the devastated countries of Europe.

NEW OFFICERS FOR FREEBORN COUNTY

Mrs. Robert A. Demo is the new president of the Freeborn County Medical Auxiliary. Other officers are: Mrs. L. C. Barr, vice president; and Mrs. H. B. Neel, secretary-treasurer. All three officers are from Albert Lea.

RAMSEY TO ENTERTAIN AUXILIARIES, MAY 9-11

Mrs. W. H. Von der Weyer

Two luncheons, a style show, dramatic entertainment, a tea and a breakfast have been arranged by the Ramsey County Auxiliary for wives of physicians attending the annual Minnesota State Medical Association meeting in Saint Paul, May 9, 10 and 11.

The first luncheon will be in the Casino Room of the Hotel Saint Paul, following the Executive Board meeting Monday, May 9. At 3 p.m. there will be a tea in the lounge of the Women's City Club honoring State Auxiliary officers. That evening, in the Continental Room of the Hotel Saint Paul, there will be a variety program, including singing, motion pictures and dancing, and the Hennepin County Auxiliary will present a skit entitled, "Episodes in the Life of a Doctor's Wife."

The annual meeting of the State Auxiliary will be held at the Minnesota Club at 10:00, followed by the annual luncheon, featuring a style show.

Physicians and their wives will attend the annual Medical Association banquet Tuesday evening, and Auxiliary members will have a final conclave Wednesday morning at a 10 o'clock breakfast at the Hotel Saint Paul.

CANCER ACTIVITIES VARIED

Mrs. Mark E. Ryan

The State Auxiliary, following a twelve-month calendar of public health projects, is turning its attention to cancer during April by taking stock of what has already been done and what new activities can be started.

For many years, the Auxiliary has been affiliated with the Minnesota Division of the American Cancer Society. The Auxiliary Executive Board includes a Cancer Committee chairman who keeps the Auxiliary informed of the work being done by the Cancer Society and its need for assistance.

The state-wide poster-essay contest on cancer, which is annually sponsored by the Minnesota Division of the American Cancer Society and the Woman's Auxiliary to the Minnesota State Medical Association, has just been completed. More than 12,000 children participated,

(Continued on Page 424)

CANCER ACTIVITIES VARIED

(Continued from Page 422)

indicating the interest which this type of cancer education has stimulated.

Many Auxiliary members attended the cancer school for lay people held at the University's Center for Continuation Study, February 18 and 19. The course is conducted by the State Cancer Society to educate its corps of workers in the newest developments and progress in the field of public health.

An unprecedented volume of requests for funds and dressings has accelerated County Auxiliary efforts. Many of the units are engaged in making dressings to supply county nurses who care for indigent cancer patients. Many supplies are also being channeled to Our Lady of Good Council Hospital in Saint Paul. This hospital, one of six of its kind in the United States, was opened in 1941 and has a 100-bed capacity, with four large wards. Any patient is admitted, regardless of religion, color, sex, age or place of residence. The only requirement is a written statement from the physician that the patient is incurably ill and indigent.

NURSE RECRUITMENT TEAS ON DOCKET

Mrs. Russell Hendrickson

Junior and senior high school girls will be entertained at tea in Moorhead, Barnesville, Hawley, Lake Park and Detroit Lakes by the Clay-Becker Auxiliary. A speaker at each tea will supply information concerning the various types of nursing services and their training requirements.

This is the second project undertaken recently by the Clay-Becker Auxiliary. Members held a sale at Detroit Lakes of articles made by patients of Sand Beach Sanatorium. They plan next year to expand the sale, which is an annual event, to neighboring cities.

ANNUAL AMA AUXILIARY MEETING, JUNE 6-10

Haddon Hall will be the headquarters for the annual meeting of the Woman's Auxiliary to the American Medical Association, scheduled for Atlantic City, New Jersey, June 6-10.

Requests for reservations are to be sent to Dr. Robert A. Bradley, Chairman, Subcommittee on Hotels, 16 Central Pier, Atlantic City, New Jersey.

O'BRIEN MEMORIAL PLANS COMPLETED

Mrs. Harlow Hanson

Over a period of years, the Woman's Auxiliary to the Minnesota State Medical Association has been actively interested in health education. For counsel and guidance, members frequently turned to Dr. William A. O'Brien. No matter how rushed he was in his busy daily life, he always found time, not only to give valued suggestions, but to contribute appreciably to the success of Auxiliary programs throughout the state with his unforgettable health talks. His fund of information seemed inexhaustible, and his own special way of reaching the public with his message inspired a keener interest in public and personal health.

In appreciation of Dr. O'Brien's unceasing interest, a memorial fund is being established by the members of the State Medical Auxiliary. A desk and chair will be placed in his honor in the Dr. O'Brien Memorial Seminar room in the Mayo Memorial building, at the University of Minnesota.

MIDWINTER BOARD MEETING

Mrs. W. A. Merrit

Forty Auxiliary members met at the Continuation Center of the University of Minnesota, February 24, for the mid-winter meeting of the board of directors and heard Mrs. H. F. Wahlquist, state president, report on the Chicago conferences of November 4 and 5.

Special reference was made to discussions on school health, the Ewing report and the facilities of the National Physicians Committee and the American Medical Association.

The president-elect, Mrs. H. E. Bakkila, reviewed scholarship fund procedure and commented on the hospitality proffered to guests at the Chicago conference.

Mrs. Mark Ryan reported a two-day cancer school, stressing a threefold program: service, research and education.

Mrs. Benjamin Souster, Auxiliary editor for MINNESOTA MEDICINE, thanked the journal for the space given the Auxiliary and urged auxiliaries to send material to her, or to the office of the Minnesota State Medical Association.

Mrs. C. L. Sheedy outlined methods of selling *Hygeia* and reported an increase in subscriptions over last year. Mrs. Bakkila announced that Clay-Becker and McLeod Counties have reorganized.

Mrs. Hubert Johnson's public relations report on Health Days held in Worthington, Willmar, Fergus Falls, Crookston, Duluth, Mankato, Pipestone, Minneapolis and Saint Paul was amplified by William Griffiths of the Minnesota Department of Health. Mr. Griffiths gave credit to the Auxiliary and its president for introducing the program in Minnesota. "The approach through education is best," he pointed out. "Laws are ineffective until people are ready for them. The educational process is a slow process; people are not enlightened overnight."

He added that Health Days—and the Health Councils that are developing from them—are a direct answer to Mr. Ewing. "They are the democratic way of doing things."

The National Health Assembly, held in Washington, D. C., in February, was reviewed by Dr. F. J. Elias. After describing briefly the AMA's co-ordinating committee of fifty-three members and the work being done by the public relations counsel of Whitaker and Baxter, he told the women that the first job ahead is defeating, within the next sixty days, the Wagner-Murray-Dingell Bill. "Secondly, we must develop a long-term program so we can completely destroy compulsory health insurance—by educating the public to the issues involved and by taking the financial shock out of illness through encouragement of voluntary insurance plans," he said.

Mrs. Elmer Rusten, legislative chairman, cited the

(Continued on Page 428)

In Memoriam

GILBERT COTTAM

Dr. Gilbert Cottam, former Minneapolis doctor and leader in Minnesota and South Dakota medicine, died Friday, March 4, 1949, in Pierre, South Dakota, at the age of seventy-five.

A well-known surgeon and medical spokesman, Dr. Cottam left Minneapolis in 1940 to practice in Sioux Falls, S. D. He became superintendent of the South Dakota State Board of Health, at Pierre, in 1943.

Dr. Cottam was born in Manchester, England, and came to the United States at the age of sixteen.

He was graduated from St. Louis (Mo.) University in 1893, practiced at Rock Rapids, Iowa, until 1910, at Sioux Falls until 1930, and then for ten years in Minneapolis.

At various times he was president of the South Dakota State Medical Association, a governor of the American College of Surgeons, president of the Sioux Valley Medical Association, associate editor of MINNESOTA MEDICINE and editorial board member of *Journal-Lancet*.

In the Hennepin County Medical Society, he was a trustee and executive committee member and editor of *The Bulletin*.

Dr. Cottam was a leader in the movement "to provide the public with information as to who is a specialist and who is not," and in 1927 became one of the founders of the American Board of Surgery.

During World War I, he was a major in the army medical corps and surgical chief at the 88th base hospital in France. In World War II, he headed emergency medical service at the Sioux Falls Office of Civilian Defense.

He wrote many scientific papers and held many medical posts.

BYRON O. MORK, SR.

Dr. B. O. Mork, Sr., dean of the southwestern Minnesota medical profession and one of the founders of the Worthington Clinic, died March 2, 1949, at the age of eighty-two.

Byron Olaf Mork was born in Hjorundford near Aalesund, Norway, March 28, 1867. As a lad of nineteen, he came to the United States in 1866, worked several years with an Indian agency at Granite Falls and on farms before entering Hamline University, where he qualified for his bachelor's degree in 1898.

It was early in the first decade of the present century that Dr. Mork gained his M.D., at Hamline, at the age of forty.

After about a year in Hills, Dr. Mork moved to Worthington in 1908, to remain the rest of his life, to round out forty years in the practice of his profession.

His first associate in medical circles was Dr. Henry Wiedow, with whom he operated the old City Hospital. In 1918, Dr. Mork entered partnership with Dr. F. G. Watson of Rushmore, and Dr. G. C. Turner.

In 1920 the three partners were joined by three others —Drs. F. W. Metcalf and C. R. Stanley, Fulda, and Dr. J. T. Smallwood, Worthington, in formation of the Worthington Clinic.

Dr. Mork was married in 1899 at Wood Lake to Maude Coghlan, mother of his three children: Elmer, who died during the 1918 influenza epidemic; Byron O. Jr., now a clinic staff physician, and Raymond E., present Nobles County attorney. Mrs. Mork died in 1940. He was married in 1942 to Mrs. Metcalf, widow of his former associate, who also survives him. There are three grandchildren.

ANGUS W. MORRISON

Dr. Angus W. Morrison, prominent in Minneapolis medical and civic affairs for thirty-five years, died January 28, 1949, at Eitel Hospital. He was sixty-five years old.

Dr. Morrison was a member of a pioneer Minneapolis family. His grandfather, Dorilus Morrison, was the city's first mayor in 1867, and was associated with many of the early industries.

Dr. Morrison was one of the founders of the Nicollet Clinic.

For several years he was a member of the staff at the University of Minnesota Medical School, and for many years a member of the staff at General Hospital.

He was a member of the American Neurological Society, American Psychiatric Society, American Medical Association and other medical organizations. He served as a captain in the medical corps of the United States Army in France in World War I.

Retiring from an active practice of medicine in 1931, Dr. Morrison became prominently identified in the business life of his city.

Dr. Morrison was born in Minneapolis July 18, 1883, the son of Clinton and Julia Washburn Morrison. He lived his entire life in the Twin Cities area. His home at his death was at Maplewoods, Wayzata.

He was educated in Minneapolis schools; Hotchkiss school, Lakeville, Conn.; Yale University, and Johns Hopkins Medical School.

He took postgraduate work in Munich, Berlin and London and served an internship at the Royal Victoria Hospital, Montreal, Canada. He started the practice of medicine in Minneapolis in 1912, specializing in neurology and psychiatry.

In 1914, Dr. Morrison was married to Helen Truesdale, and she survives him. Other survivors include a daughter, Mrs. John P. Snyder, Jr.; three sons, Clinton, Angus and John; and five grandchildren, all of Wayzata.

(Continued on Page 428)

(Continued from Page 426)

G. ALLEN SATHER

Dr. G. Allen Sather, practicing physician in Fosston, Minnesota, for forty years, died at his home in Fosston, February 14, 1949, at the age of sixty-eight.

Dr. Sather was born August 15, 1881, at Cannon Falls, and lived at Willmar. His medical training was received at the University of Iowa, from which he received the M.D. degree in 1908. He practiced medicine for a short time at Ridgeway, Iowa, and was married there to Clara Mathilda Ringoen in 1909. That year they moved to Fosston.

In addition to his medical practice, Dr. Sather was mayor of Fosston for several terms, a director of the Farmers State Bank and once president of the board. He was a member of the Red River Valley Medical Society; the Minnesota State Medical Association and the American Medical Association.

Dr. Sather was preceded in death by his wife who died December 12, 1948.

Survivors include four sons and one daughter: Dr. George Sather, Fosston; Dr. Norman Sather, Mora; Dr. Edgar Leland Sather, Flatrock, Michigan; Dr. Andrew Sather, Bemidji, and Mrs. Luther Moore, Lexington, Kentucky.

He is also survived by his sister, Mrs. Helen Riemen, Glencoe; and three brothers: O. P. Sather, Minneapolis; Dr. Edgar Sather, Alexandria; and Frank Sather, Minneapolis.

HERBERT P. SAWYER

Dr. H. P. Sawyer, resident of Goodhue, Minnesota, for forty-four years, died on the morning of March 10, 1949, in a Red Wing hospital. He had been in failing health for several years.

Born in Steele County, November 25, 1870, Dr. Sawyer attended country schools, graduating from the Owatonna high school in 1899. The following two years he taught school, then attended the medical department of the University of Minnesota in 1901. Following his graduation, he began practice in Goodhue village in 1905 and continued in active practice until 1931 when he retired.

During his practice in Goodhue, Dr. Sawyer was associated at various times with Drs. C. E. Gates, S. V. Gausemal and George Dewey. His marriage to Miss Minora Backman took place in Goodhue in 1920.

Survivors include his wife, one sister-in-law, Mrs. G. A. Sawyer of Minneapolis, and one niece, Margaret, also of Minneapolis.

ROY G. SPURBECK

Dr. Roy G. Spurbeck, widely known Cloquet physician, died at his home on February 12, 1949. He had been in ill health a number of years.

Born in Mantorville, Dr. Spurbeck moved with his parents to Two Harbors as a boy, residing there several years. He was a graduate of Northwestern University medical school. He practiced medicine at Proctor for a couple of years and in 1917 came to Cloquet, continuing until poor health forced his retirement.

Dr. Spurbeck was a member of the Minnesota State Medical Association, the St. Louis County Medical Society, Dallas lodge, local Masonic Order, and of the Scottish Rite, Duluth Masonic Chapter.

He is survived by his widow, Ruby, Cloquet; a son, Dr. George Spurbeck, Menominee, Wisconsin; a daughter, Mrs. Sherman Borsheim, Duluth, and two grandchildren.

WOMAN'S AUXILIARY

Midwinter Board Meeting

(Continued from Page 424)

need for speakers and listed material that would be valuable to them. Mrs. W. H. Von der Weyer, chairman of the Committee on Arrangements for the annual meeting, extended an invitation to the functions being planned for the entertainment of members and visitors at the annual meeting in Saint Paul, May 9, 10 and 11.

HENNEPIN DISCUSSES COMMUNITY HEALTH

Mrs. R. F. Erickson

Hennepin County Health Day, March 4, centered around a panel discussion of "A Successful Health Program Needs Community Support."

Dr. Gaylord Anderson, head of the Public Health Department of the University of Minnesota, moderated the discussion. Panel members were: Dr. Clare Gates, city health department; Dr. Hermina Hartig, school health department; Mrs. Ruth T. Devney, director of community information; Calvin Aurand and Mrs. John C. Benson, health action committee; Dr. Charles Merkert, chairman of the public health committee of the Hennepin County Medical Society; Ann Hauser, county nursing service; George E. Johnson, alderman from the eighth ward and member of the health and hospitals committee of the Minneapolis Council.

Movies on cancer, mental hygiene and accidents were shown during the noon hour, with commentary by Mrs. Netta Wilson of the Minnesota Department of Health.

During the afternoon session, Dr. Robert McGandy spoke on "Trends in the Practice of Medicine," and Gov. Luther W. Youngdahl presented his proposed mental hygiene program for the state.

The next project of the Hennepin County Auxiliary is a benefit luncheon and style show, April 18. Tickets, at $2.50, may be obtained by writing or calling Mrs. Donald MacKinnon, 4000 W. 24th Street, Whittier 4457, or by writing the Hennepin County Medical Auxiliary, 2000 Medical Arts Building, Minneapolis.

"Town Meeting" in Rochester

"America's Town Meeting" will present a broadcast on Tuesday, April 26, in connection with National Mental Health Week. The topic will be "How Can We Find Personal Peace and Security in Today's World?" and the broadcast will take place from the Arena in Rochester, Minnesota.

Of General Interest

Dr. Henry E. Michelson of Minneapolis has been elected a corresponding member of the Danish Dermatological Society.

* * *

Dr. R. G. Swenson of North Branch was taken to the Rush City Hospital in February where he underwent an appendectomy.

* * *

Dr. R. R. Kierland of Rochester was elected president of the Minnesota Dermatological Society at its meeting in Minneapolis in February.

* * *

While Dr. and Mrs. A. K. Stratte of Pine City vacationed in March, Dr. Stratte's practice was temporarily cared for by Dr. Joseph D. Waller, also of Pine City.

* * *

Dr. Edward D. Anderson was elected to the board of members of the Minneapolis Community Chest in February.

* * *

Dr. Edward Bratrud of Thief River Falls returned to his Florida home at Green Acres in February after a business visit of a week in Minnesota.

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Dr. and Mrs. Raymond Minge, of Worthington, recently of Minneapolis, announced the birth of a son, John Christofer, late in February.

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Dr. R. F. Hedin of Red Wing was elected to membership in the Central Surgical Association at the meeting held in Cleveland, in February.

* * *

Dr. T. J. Dry of the Mayo Clinic spoke on March 8, to the Dane County Medical Society in Madison, Wisconsin, his topic being "Diagnosis of Congenital Cardiac Anomalies which are Amenable to Surgery."

* * *

Dr. M. J. Robertson of Cottonwood was transferred recently to the Veterans Administration Domiciliary Center at Clinton, Iowa, where he will serve as chief medical officer.

* * *

In Glenwood, on February 24, Dr. Edward Elsey opened the Elsey Clinic in a newly erected building. In order to carry on his work there adequately, he has closed his private offices in downtown Glenwood.

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Dr. J. B. Maunder, Cannon Falls, who has been associated with Dr. M. R. Williams, is leaving his practice to study in Detroit, Michigan, where he will do postgraduate work in obstetrics and gynecology.

* * *

Dr. W. C. Rasmussen of the Mayo Clinic spoke on "Neurologic Manifestations of Systematic Disease" at a meeting of the Cass County Medical Society, Fargo, North Dakota, in March.

* * *

Assisting in the Morrison County Red Cross fund drive this year is Dr. John E. Weber of Little Falls. Five ward chairmen will work under Dr. Weber, choosing solicitors.

* * *

Dr. J. F. Weir of Rochester spoke on "Differential Diagnosis of Jaundice for Surgery" in February when he attended the meeting of the Central Surgical Association in Cleveland, Ohio.

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The new office of Dr. John Hermanson of Luverne was nearing completion in March. Dr. Hermanson's new location will be equipped with an x-ray machine and new clinical apparatus.

* * *

Dr. James Learmouth, former Mayo Foundation Fellow, was called in as an official medical consultant to attend King George VI of England who recently underwent an operation in an attempt to correct the arterial obstruction which is endangering his right foot.

* * *

Dr. A. B. Rosenfeld of Minneapolis spoke on "Child Health" early this year at the Red River Valley Winter Show in Crookston, under the sponsorship of the Woman's Club. Dr. Rosenfeld accompanied his talk with a motion picture, "We'll See Them Through."

* * *

Dr. John C. Burton of St. Paul, because of a promotion received recently in the Veterans Administration, is transferring to the central offices in Washington, D. C. Dr. and Mrs. Burton will make their home in Washington.

* * *

Dr. D. C. Anderson of Olivia opened an office recently in Danube where he maintains morning office hours. His afternoons are devoted to his office in Olivia. Dr. Anderson, formerly with the Seifert Clinic in New Ulm, located in Olivia in October, 1948. He was recently appointed health officer of Danube.

* * *

Speaking at the regular meeting of the McLean County Medical Society in Bloomington, Illinois, in March was Dr. M. B. Dockerty of Rochester who presented a paper entitled, "Cystic and Solid Tumors of the Ovary."

* * *

On March 1, Dr. Richard A. Whitney, formerly of Cambridge, moved to Princeton where he will be associated with Dr. Alfred Kapsner at the Princeton Clinic. Dr. Whitney's move terminates an eleven-year practice in Cambridge.

* * *

It has been announced that Dr. Noel E. Tosseland has opened offices at 925 Medical Arts Building, Duluth, for the practice of general surgery. Dr. Tosseland recently completed a fellowship in surgery at the Mayo Clinic.

(Continued on Page 432)

(Continued from Page 430)

Dr. Manley F. Juergens, formerly of Minneapolis, has joined the staff of the Johnson-Haberle Clinic in Thief River Falls, where he is specialzing in the practice of internal medicine and roentgenology.

* * *

Dr. Robert L. Nelson of Duluth attended the Chicago Medical Society Clinical Conference in Chicago during March. Also attending were Dr. L. W. Johnsrud and Dr. F. W. Bachnick of Hibbing. The meeting was held at the Palmer House.

* * *

Dr. and Mrs. Byron Kinkade, originally of Caledonia, now residents of Minot, North Dakota, returned home for a visit in February to visit Rev. and Mrs. R. L. Kinkade. From Caledonia, they traveled to Ohio, visiting the parents of Mrs. Kinkade.

* * *

Dr. J. R. McDonald of Rochester presented two papers during February in Minneapolis, giving a Kellogg Lecture on "The Pathology of Bone Tumors"; and to the Minnesota Pathological Society, a paper: "The Smear Technic as an Aid in the Diagnosis of Cancer."

* * *

The son of the late Dr. J. J. Donovan of Litchfield, Dr. Thomas Donovan of Houston, Texas, died on March 7, at the age of thirty-eight. Surviving are his wife and three children. Dr. Donovan served as a military physician in World War II.

Dr. James A. Johnson, Minneapolis, was named to judge essays in the Hennepin County state-wide essay and poster contest sponsored by the Minnesota Cancer Society.

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Dr. L. F. Richdorf, clinical associate professor of pediatrics at the University of Minnesota, delivered a talk on breast and bottle feeding before physicians attending the short course on pediatrics offered at the University's Center for Continuation Study early in February.

* * *

Dr. J. R. McDonald, Rochester, speaking at the Center for Continuation Study at the University of Minnesota, in March, presented a paper entitled, "The Cytologic Examination of Body Secretions for Cancer Cells." Among state physicians attending the lecture was Dr. D. S. Branham of Albert Lea.

* * *

Dr. D. J. Erickson of the Mayo Clinic read two papers at the postgraduate course in physical medicine and rehabilitation at the University of Texas Medical Branch in Galveston, Texas, last month. They were: "Physical Medicine in Rehabilitation to Geriatrics," and "Rehabilitation of the Paraplegic."

* * *

Dr. Christopher Graham, the only surviving partner of the Mayo brothers, was the subject of a pictorial interview in the February issue of *Friend*, a General Motors

publication. Dr. Graham, who lives in Rochester, is a member of the board of directors for the Mayo Foundation.

* * *

Dr. Q. S. Baker of Rochester began the management of a neurosurgical clinic in February at the United States Army Hospital, Oliver General Hospital, in Augusta, Georgia. Recently he presented a paper to the staff on "A Clinical Appraisal of the Problem of Protruded Intervertebral Disk."

* * *

Drs. D. C. Campbell and W. D. Seybold of Rochester addressed the Chippewa County Medical Society, Chippewa Falls, Wisconsin, in February. Dr. Campbell spoke on "Newer Methods of Treating Blood Dyscrasias," while Dr. Seybold spoke on "Acute Abdominal Emergencies."

* * *

Dr. H. R. Butt of Rochester attended the Medical and Surgical Symposium, sponsored by the Watts Hospital at Durham, North Carolina, in February. Participating in a clinicopathologic conference, he presented a paper entitled "Evaluation of Current Tests for Liver Function."

* * *

Dr. Adelaide M. Johnson, psychiatric consultant for the Mayo Clinic, spoke at the annual meeting of the Family and Children's Service in Minneapolis on February 7, stressing the need for "a block of time" of reading, research and teaching in the training of social workers.

On March 9, Dr. Victor Johnson, Rochester, presented a paper to a joint meeting of the Philadelphia County Medical Society and the American College of Physicians, a meeting which marked the hundredth anniversary of the former organization. Dr. Johnson's paper was entitled, "Medical Education: The Past Century and the Future." The meeting was held in Philadelphia.

* * *

Dr. S. S. Houkum and Dr. W. A. Klein of Duluth presented a report on the annual meeting of the American Academy of Orthopedic Surgeons, held in Chicago earlier this year, to members of the St. Louis County Medical Society, at a meeting held on March 10. Speaking also before the group was Dr. Frank J. Elias who talked on pending medical legislation.

* * *

The home of the late Dr. Donald Colp, situated in Robbinsdale, has been converted into a twenty-nine-bed rest home. Dr. Edward Colp son of the late physician, is opening his offices in the new building. Modern equipment is being installed to care for the chronic, convalescent and aged patients there. The home was opened early in March.

* * *

Dr. L. F. Leitschuh, originally of Sleepy Eye, has just completed his residency at St. Mary's Hospital, Minneapolis, where he specialized in obstetrics and gynecology. He is planning to establish private practice in Minneapolis. Dr. Leitschuh's brother, Captain Robert Leitschuh, will receive his discharge from the army in

July, at which time he will accept a three-year residency at the Veterans Hospital in Milwaukee, specializing in orthopedics and general surgery.

* * *

Among those present at the University of Minnesota's Center for Continuation Study for the course in heart disease were: Dr. Sidney A. Whitson, Dr. Donald S. Branham, and Dr. Daniel L. Donovan, Albert Lea; Dr. A. J. Lenarz, Browerville; Dr. A. Neumaier, Glencoe; Dr. R. J. Wilkowske, Owatonna, and Dr. Julius C. Buscher, St. Cloud.

* * *

Dr. Reynold Jensen, who is in the pediatrics department at the University of Minnesota, spoke at the Junior Chamber of Commerce Alumni Luncheon in February, at the St. Cloud Hotel. Dr. Jensen's topic was, "Your Child's Mental Health." This talk was presented as part of St. Cloud's observance of University of Minnesota Week.

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Dr. Conrad Karleen of Minneapolis spoke at the final meeting of the in-service course on conservation of human resources sponsored by the department of special education and rehabilitation, Minneapolis Public Schools. The meeting, held in Bryant Junior High School, took place on March 15. Dr. Karleen discussed reconstructive surgery with the group.

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Dr. J. M.McMahon, Mayor Clinic, speaking at the Mid-Continent Regional Park and Recreation Conference, on February 25, emphasized the importance of recreation and hobbies as part of the mental health program of any individual. He described particular programs which can be community and family-wide aids. The meeting, held in Rochester, had over 100 attendants.

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Dr. Deno Wedes of St. Paul has recently become associated with Dr. G. F. Engström, Willmar, in the practice of medicine and surgery. Dr. Wedes completed his internship at the University Hospital in Madison, Wisconsin, and shortly thereafter engaged in special studies in internal medicine at the University of Wisconsin.

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Dr. O. T. Clagett of the Mayo Clinic in February, spoke in Wichita, Kansas, where he presented two papers to a joint meeting of the Sedgwich County Medical Society and the Wichita Medical Society. His first paper was entitled "Surgical Management of Lesions of the Stomach and Duodenum"; the second, "Surgical Treatment of Congenital Anomalies of Great Vessels."

* * *

Dr. J. W. Pender, Rochester, presented a talk to the Kansas Section of Anesthesiology at Emporia, Kansas, early this year, speaking on "Responsibilities of the Future Anesthesiologist." While in Kansas, he spoke to a joint meeting of the Kansas Section of Anesthesiology and the Lyon County Medical Society on "Anesthesia for Abdominal Surgery."

* * *

Dr. Albert Faulconer of Rochester lectured for a course at the George Washington University School of

Medicine, Washington, D. C., in February. The lectures presented were: "Anesthesiology: Oximeter, Gas Analysis, Blood Pressure and Flow, and So Forth," and "Oxygenation: Relation to Inhalation and Intravenous Anesthesia."

* * *

Dr. F. J. Hill, Minneapolis city health commissioner, announced in February that an additional room would be opened at the Well-Child Clinic, at Third Street and Third Avenue South, for the convenience of shoppers in the Loop area. The clinic, which opened on February 21, 1949, will be in operation on both Mondays and Fridays.

* * *

Dr. Leo F. Twiggs, originally of Benham, Kentucky, moved in February to Austin where he is associated in practice with Dr. Paul Leck. Dr. Twiggs is a graduate of the University of Michigan Medical School, 1941. His internship was served at the Henry Ford Hospital in Detroit, following which he entered the armed services.

* * *

Dr. J. K. Butler of Carlton visited Chicago in February to attend the fourth annual meeting of the National Conference on Rural Health and the National Conference on Medical Service. Dr. Butler acted in the capacity of a delegate from the seventh Minnesota district. Later that month, Dr. Butler attended the course on cardiovascular diseases at the University of Minnesota's Center for Continuation Study.

* * *

Recently appointed to head the department of pediatrics at Stanford University was Dr. John A. Anderson of Minneapolis. Dr. Anderson's new assignment will begin in September of this year. Formerly Dr. Anderson served as chairman of the Pediatrics Department of the University of Utah; and from 1937 to 1943, as a member of the faculty at the University of Minnesota Medical School, of which he is a graduate.

* * *

At a meeting of the Central Surgical Association held in Cleveland, Ohio, in February, two physicians from Rochester delivered papers. Dr. E. S. Judd presented a paper written in collaboration with Dr. L. H. Beahrs: "Epithelioma of the Lower Lip: Evaluation of the Cervical Lymph Node Dissection." Dr. J. G. Love presented "Transplantation of the Spinal Cord for Paraplegia Due to Pott's Disease of the Spine."

* * *

Among the forty physicians from Minnesota who attended the first national meeting of the American Academy of General Practice were Dr. H. B. Clark, St. Cloud, and Everett J. Schmitz of Holdingford. They attended in the capacity of official state delegates. Noteworthy among business covered was the unanimously approved statement against compulsory health insurance. The group asked also that the American Medical Association standardize and regulate medical and surgical training programs as offered throughout the nation.

A meeting sponsored by the Dakota County Republican Committee was held in the public clinic of the Hastings State Hospital in March. Lectures on mental health were presented by Dr. Ralph Rossen, superintendent, and two of his assistants, Drs. Bradley and Brown. The 100 guests listened also to Superintendent Farrell of the Red Wing Training School as he talked on a program for correlating mental studies with delinquency problems.

* * *

Dr. Harvey Knoche, a graduate of Worthington College and the University of Minnesota in 1945, is establishing offices in Morgan in association with Dr. William E. Johnson. Dr. Knoche interned in Buffalo, New York, after which he joined the United States Public Health Service at the Marine Hospital in Portland, Maine, later serving in Mayport, Florida. Dr. Knoche then transferred to Detroit, Michigan, where he was in charge of chest diseases and, later, out-patient work.

* * *

Three Rochester physicians attended the Annual Clinical Conference of the Chicago Medical Society which took place in that city early in March. Each physician presented a paper to the group: Dr. J. L. Emmett spoke on "The Surgical Treatment of the Urinary Retention." Dr. H. M. Weber spoke on "Diagnosis of Early Intestinal Cancer," later participating in a round-table discussion. Dr. H. W. Woltman addressed the group on "The Influence of Arteriosclerosis on the Central Nervous System."

* * *

Recently the Mayo Clinic opened a lounge for members emeritus of the Clinic staff, of which there are sixteen at the present time. The room, equipped to serve as a library, writing room and lounge for social relaxation, is located on the fifth floor of the Clinic building. Present emeritus physicians are: Drs. Samuel Amberg, W. M. Boothby, W. R. Braasch, J. L. Crenshaw, B. S. Gardner, H. Z. Griffin, Christopher Graham, B. E. Hempstead, W. S. Lemon, A. H. Logan, W. C. MacCarty, J. C. Masson, Albert Miller, E. C. Rosenow, F. L. Smith, and C. G. Sutherland.

* * *

Hennepin County Community Health Day, held on March 4, brought together representatives of more than 300 women's organizations. Speakers for the occasion were: Dr. Gaylord Anderson, head of the public health department of the University of Minnesota Medical School; Dr. Clare Gates, Minneapolis Health Department physician; Dr. Hermina Hartig, public school physician; and Dr. Charles Merkert, public health chairman of the Hennepin County Medical Society. Also speaking were several representatives of lay organizations.

* * *

Dr. Gaylord W. Anderson, director of the school of public health at the University of Minnesota, attended an inter-American conference of health and sanitation officers held in Quito, Ecuador, March 27-April 2.

As a member of the staff of consultants with the division of health and sanitation of the Institute of Inter-

American Affairs, Washington, D. C., Dr. Anderson met with twenty-five or thirty health and medical officers from fourteen American countries.

The staff conference discussed institute affairs and planned the division's future program. Visits were made to several field projects.

* * *

Giving the John Black Johnston Memorial Lecture at the University of Minnesota's Museum of Natural History in January was Dr. Paul C. Bucy, who is professor of neurology and neurological surgery at the University of Illinois Medical College in Chicago. The Johnston lecture is given each year in honor of Dr. J. B. Johnston who established the University's College of Science, Literature and Arts. Dr. Bucy's lecture was on the control of muscular infirmities by surgery of the brain. Dr. Bucy spoke also, on the following day, at the Center for Continuation Study, his topic being spinal injuries.

* * *

On Saturday, February 19, Dr. William A. Coventry, Duluth physician, was honored as the twenty-fifth person to be named to the local Hall of Fame.

Dr. Coventry, a graduate of the University of Minnesota, was one of the founders of the Duluth Clinic in 1916. He has served as president of the St. Louis County Medical Society, and he was governor of the American College of Surgeons in 1940. Dr. Conventry has also served as president of the Minnesota State Medical Association and is a recipient of an award from that group.

Dr. William D. Coventry of Duluth and Dr. Markham Coventry of Rochester are sons of Dr. Coventry.

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The February issue of *Reader's Digest,* reprinting an article from the *American Mercury*: "You Add Years to Your Life," designated that the headquarters of the American Geriatrics Society was situated in Minneapolis. As a result of this mis-statement (headquarters are in Rhode Island), the office of the medical journal, *Geriatrics* (published in Minneapolis) has been plagued with hopeful inquiries by the aging who are looking for better health, greater strength and longer lives. The situation indicates great eagerness on the part of the increased population of the aged to use these later years to good advantage.

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Reported as attending the course in pediatrics which was offered in February at the Center for Continuation Study by the University of Minnesota were the following: Dr. Ralph E. Wenzel, Blue Earth; Drs. Silas W. Giere, Richard P. Griffin, and Walter H. Sutherland, Benson; Dr. Troy G. Rollins, Elmore; Dr. Eugene L. Zorn, Erskine; Drs. Willard Hall Peterson and Lyle V. Berghs, Owatonna; Dr. Marie K. Bepko, Cloquet; Dr. Carl J. Luckemeyer, St. Cloud; Dr. Raymond C. Hottinger, Janesville; Dr. Harry Shragg, Elmore; Drs. Sidney Finkelstein and Philip A. Kleiger, Cass Lake; Dr.

Albert J. Lenarz, Brownersville. Physicians from Brainerd attending the course were Drs. Malcom D. McGreary and Francis J. Schnugg. From Willmar came Dr. Roger P. Michaels, and from Albert Lea, Dr. Robert A. Demo.

* * *

The 27,677 cases of poliomyelitis reported in 1948 makes the last year next to the worst in the twenty-two years during which the Public Health Service has been keeping accurate records for the country. In 1916, approximately 29,000 cases were reported. During January and February of this year, 759 cases have been reported —an all-time high for these two months. This compares with 270 cases for this two-month period last year, and 500 for the same period in 1947. Thus, the number of cases reported for January and February is not indicative of the year's total.

* * *

Dr. George E. Moore, a graduate of the University of Minnesota Medical School and specialist in surgery and onocology, was one of thirteen young physicians of the country to receive the John and Mary R. Markle Foundation Scholarship this year. This award, which totals $23,000, will cover a five-year period of study which Dr. Moore will take at the University of Minnesota. The Scholarship plan, begun in 1948, has made awards to twenty-nine physicians to date, and it is estimated by Mr. John Russell, executive director of the Foundation, that a total of fifty physicians will be recipients over the five-year period of the Foundation's existence.

The National Cancer Institute granted funds totaling $671,200 toward further laboratory and clinical research in cancer on March 25, it was announced by the Federal Security Administration. Three physicians from the University of Minnesota are being financed in their research in consequence. Dr. Jerome T. Syverton was granted $14,711 to continue his work in immunological studies on mice mammary cancer and leukemia. Dr. John J. Bittner, receiving $21,925, will study the genesis of mammary cancer in mice. A grant of $6,750 was made to Dr. Arthur Kirschbaum who is doing research on the induction of experimental therapy for leukemia in mice.

* * *

Dr. Myron J. Weaver, present assistant dean of the University of Minnesota Medical School, will leave the University in July to become dean of the new medical school at the University of British Columbia near Vancouver, Canada. The school will open in the fall of 1950.

Dr. Weaver has served on the faculty at the University of Minnesota for six years. He is an attending physician at the Minneapolis General Hospital, and senior attending physician at the University Hospitals.

An alumnus of Wheaton College and the University of Chicago, Dr. Weaver began his work at the University of Minnesota in the capacity of assistant professor of preventive medicine and public health. He was named to his present position in 1944.

* * *

Dr. Malcolm A. McCannel of St. Paul has recently become associated with Dr. Walter Camp, with offices in Minneapolis. Dr. McCannel's newly assumed practice is limited to opthalmology and opthalmic surgery.

A graduate of the University of Minnesota, Dr. McCannel received his M.D. degree from Temple University School of Medicine, Philadelphia, Pennsylvania, in 1941. He interned at St. John's Hospital in Brooklyn, New York, transferring later to Ancker Hospital in St. Paul. He obtained a teaching Fellowship in opthalmology at the University of Minnesota, doing graduate work at the New York Postgraduate Hospital in New York. In 1946, Dr. McCannel received a Master of Science degree in ophthalmology from the University of Minnesota and shortly thereafter was certified as a Diplomate of the American Board of Ophthalmology.

* * *

The "outstanding young man in Minneapolis for 1948" designated by the Junior Chamber of Commerce of Minneapolis is Dr. Robert A. Huseby, assistant professor of cancer biology at the University of Minnesota. The award was conferred on Thursday, March 10, at a "Bosses Night" dinner at Coffman Memorial Union.

In 1948, Dr. Huseby was awarded the William A. O'Brien assistant professorship in cancer, a field he has specialized in since 1941 when he first worked with Dr. M. B. Visscher, head of the department of physiology. For a year (1944) Dr. Huseby studied at the Rockefeller Institute in New York, under the scholarship award, the International Cancer Research Fellowship. His present

work is with Dr. John Bittner. Dr. Huseby is a native of Minneapolis and a graduate of the University of Minnesota Medical School.

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Three Minnesota physicians have issued a report recently on the medical care afforded the Indian population. Drs. W. F. Braasch, Rochester; B. J. Branton, Willmar, and A. J. Chesley of St. Paul, have served as an investigation committee sponsored by the American Medical Association. The committee was established shortly after the dismissal of twenty-eight positive tuberculous Indian patients from an up-state sanatorium because of insufficient subsidy from the United States Government. Listing a seven-point program, the report asks for the construction of new hospitals for the Indian territories and for an educational program which will work towards the eventual integration of the Indian with contemporary American educational, health and social standards—a change which, the committee stated, would be economically and socially beneficial to the entire Northwest area.

* * *

The Saturday Evening Post, in two successive January issues, recognized the work of several Minnesota physicians. The first article, "Are We Winning the War Against TB?" told of the work of Drs. Corwin Hinshaw, F. M. Feldman and Karl Pfuetze and their work with streptomycin. Dr. Hinshaw is president of the American Trudeau Society and a member of the Mayo Clinic staff. Dr. Feldman is now living in Washington, D. C., and Dr. Pfuetze is medical director of the Mineral Springs Sanatorium at Cannon Falls.

The second of the two articles was concerned with Dr. John S. Lundy who is head of the Mayo Clinic section on anesthesia. Entitled, "Sing Me to Sleep, Doctor," the article told of Dr. Lundy's work, describing also an oxygen intake signal unit which has been developed by Drs. Albert Faulconer and Roger W. Ridley of the Mayo staff, with the aid of R. E. Jones of the Clinic's engineering department.

* * *

Bids on the construction of the new student health service building were opened by University of Minnesota officials during the first week of April.

The site of the new building will be the area just west of University Hospitals and south of the Botany building. The building will be four stories high and will face on Church Street with a frontage of 183 feet. It will be eighty-two feet in depth.

Contained in the building will be examination rooms, doctor's offices; a large eye, ear, nose and throat clinic; a dental clinic with space for ten dental chairs; an x-ray section and spacious waiting lounges. No bed space has been provided in plans for the new building as the health service will retain its bed space on the fourth and fifth floors of the present building, which is a part of the University Hospitals plant. A tunnel under Church Street will connect the two buildings.

Estimated cost of the building will be in excess of $750,000, and the structure will be paid for out of health service earnings. Magney, Tusler and Setter, Minneapolis architects, prepared the plans.

Indicative of the widespread interest shown by both medical and lay groups of Minnesota concerning the problems posed by compulsory health insurance and socialized medicine, are meetings devoted to lectures and discussion groups dealing with this problem. Among such meetings recently held are the following:

Dr. Donald K. Freedman, a staff member of the Arrowhead Health Center, Inc., spoke before the Saturday Lunch Club at a meeting held at the Medical Arts Building in Duluth late in February.

Dr. Martin O. Wallace spoke to the Arrowhead Civic club in Duluth late in January at a meeting held in the Arrowhead Hotel. He spoke also before a meeting of the Duluth Republican Women's Club on the same topic.

Dr. Myron Weaver, assistant dean of the University of Minnesota Medical School, speaking in February at the Center for Continuation Study during a course on hospital administration, expressed his view on the trends and problems concerned with socialized medical plans.

Dr. John W. Beuning, public relations officer of the Stearns-Benton Medical Society, spoke at the regular meeting of the East St. Cloud Boosters Club in February, discussing similar issues.

Dr. Haddon M. Carryer of Rochester spoke before the Mayo Foundation in February. Dr. Carryer, acting as secretary of the Olmsted-Houston-Fillmore-Dodge County Medical Society, spoke in explanation of the implications of the Oscar Ewing Report.

Dr. A. W. Adson of Rochester, past president of the Minnesota State Medical Association and member of the State Board of Medical Examiners, spoke before the Minnesota House of Representatives in March, expressing his views on the co-operative medical care bill.

The 1949 Farm Forum, which was held on March 10 and 11 at the Radisson Hotel in Minneapolis, under the sponsorship of the Chamber of Commerce, launched a debate on compulsory health insurance which is one of the issues confronting farmers at the present time.

Dr. Mitrofan Smorszczok of Freeport, a displaced Polish physician, lectured over station KFAM on March 11, presenting a report on socialized medicine as it has operated in various European countries. His talk, "Socialized Medicine as I Saw It," was given as one of a radio series on this problem being sponsored by the Stearns-Benton Medical Society. Earlier that same week, on March 9, Dr. Smorszczok spoke before the Exchange Lunch Club at the St. Cloud Hotel. His talk was descriptive of state subsidized medicine as found specifically in the USSR.

Speaking before the Saturday Lunch Club in Duluth on March 12 was Dr. Martin O. Wallace. Dr. Wallace explained his view of socialized medicine to the attending members, stating that he feared that the standard of medical service would be lowered with the advent of a government-sponsored medical plan.

Dr. H. J. Jeronimus, Duluth physician and surgeon, spoke to the members of the second district Minnesota Nurses Association at St. Mary's Hospital, Duluth, on March 14. He urged that the government consider the solving of more stressing problems—sanitation, housing, and so forth—before attempting to better the already high level of health service in America.

HOSPITAL NEWS

Dr. J. T. Loughlin of Grey Eagle was elected president of the St. Gabriel Hospital medical staff on February 15, succeeding Dr. G. M. A. Fortier of Little Falls. Dr. A. M. Watson of Royalton was elected vice president, and Dr. R. J. Stein, of Pierz, secretary. Named to the Executive Committee were: Drs. R. T. Healy of Pierz, S. W. Watson of Royalton, and G. M. A. Fortier of Little Falls. The meeting was held in St. Gabriel's Hospital in Little Falls.

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Re-elected as Chief of Staff at St. Mary's Hospital in Minneapolis this year, was Dr. F. B. Mach. Dr. Mach has been a member of the hospital staff for over thirty years.

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Newly elected as chief of staff of the Fairview Hospital is Dr. Arthur C. Skjold. Dr. Silas Anderson has assumed the post of vice chief of staff; Dr. Harry Mixer, that of secretary, and Dr. Stanley Stone, that of treasurer. Elected to the Executive Committee were Dr. Donald B. Frane, Dr. Harry B. Hall, Dr. Louis J. Roberts, and Dr. R. W. Kouchy.

Ancker Hospital has established extra facilities recently for the care of children's heart diseases. Under the leadership of Dr. Ivan D. Baranofsky, assistant professor of surgery at the University of Minnesota Medical School, arrangements are being made so that Ancker Hospital can assume some of the care, treatment and surgery in heart cases formerly carried solely by the University Hospitals. Dr. Baranofsky will perform the greater amount of surgery, and a new one-bed room has been provided on the floor near his office in Ancker Hospital so that the problem of postoperative observation will be lessened.

BLUE SHIELD NEWS

On December 31, 1948, Minnesota Medical Service Inc., or Blue Shield—as it is more commonly called—completed its first year of service to the people of Minnesota. Much progress was made in that year, so much in fact that the Minnesota Blue Shield received national recognition from Paul R. Hawley, M.D., Chief Executive Officer, Associated Medical Care Plans, which is the co-ordinating office of all Blue Shield plans.

This wonderful growth can best be explained in the few words published in the *Blue Cross Bulletin*, January-February, 1949, which quotes Mr. A. M. Calvin, Minnesota Blue Cross-Blue Shield Executive Director: "With living costs high as they are today, paying for medical care has become a very serious problem for the majority of people. They are enrolling in Blue Shield because they find this non-profit benefit plan the right answer to their medical care problems."

The success of the Blue Shield plan in Minnesota to date is due to the support, loyalty and assistance given by the doctors of Minnesota, the Board of Directors of Blue Shield, by Mr. F. Manley Brist—the attorney who has spent much time attending meetings both organizational, state, and national, by the employes of Blue Cross and Blue Shield, and to the general public which has accepted Blue Shield in the same spirit that it accepted Blue Cross fifteen years ago.

The year 1948 was a good one for Minnesota Blue Shield and Blue Cross. This was also true nationally. Minnesota enrolled 130,369 participant subscribers, of which 100,000 were made effective as of December 31, 1948; and an income of $328,007.77 was received. A total of $169,269.90 (51.5 per cent) was returned to the subscribers in the form of payments to doctors of medicine for services rendered Blue Shield patients; and $32,860.80 (10 per cent of the income) is in reserve for unreported cases. A total of 61.5 per cent of income was used for subscribers' care. Operating expenses for the year amounted to $45,531.03 (13.9 per cent of earned income).

During the year allowances were made on 2,449 surgical cases in the amount of $113,813.44; this comprises 67.2 per cent of the total services allowed. Medical service rendered to hospitalized patients only (1,831 cases) amounted to $43,516.16 (25.7 per cent). Obstetrical services totalled 185 cases, amounting to $9,241.00 (5.5 per cent). The remaining amount of $2,699.00 (1.6

per cent) was allowed for such ancillary services as x-rays, anesthesia, assisting and after-care.

The greatest number of surgical services were for surgery of the bones, joints, and tendons, these amounting to 400 cases; gynecology, 337 cases; surgery of the skin, 309 cases; tonsillectomies, 212 cases; appendectomies, 210 cases. The largest amounts allowed on any one category were: $20,805.26 for gynecology, $16,045.50 for appendectomies, and $14,866.11 on surgery of the bones, joints, and tendons.

Blue Cross also had an outstanding year, and at the end of 1948 893,662 participant subscribers were enrolled. A total of $7,111,649.00 was allowed toward hospital bills of Blue Cross patients, an increase of 42.3 per cent over 1947; thus, 87.5 per cent of the Blue Cross income was returned to the subscribers in benefits. 11.2 per cent was used for administrative expenses.

A brief look at the national picture will show that national Blue Shield enrollment has reached 10,000,000, with an excess of $65,000,000.00 being paid for benefits during the past year. Blue Cross nationally now covers nearly 32,000,000 subscribers and total benefits paid during 1948 were over $250,000,000.00.

During February, the Minnesota Blue Shield office mailed a supply of Home and Office Medical Service Report forms to all its participating doctors. Unfortunately, many of the forms have been returned as unclaimed or unlocated. The mailing list in the Blue Shield office is maintained from the addresses appearing in the annual State of Minnesota Directory of Licensed and Registered Physicians and Surgeons. However, since many changes can occur between publication dates of each new Directory, it is requested that the Blue Shield office be informed of any address changes of the Minnesota doctors of medicine. In this way Blue Shield service can be improved to the satisfaction of all concerned.

BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

AFSCULAPIUS COMES TO THE COLONIES. The Story of the Early Days of Medicine in the Thirteen Original Colonies. Maurice Bear Gordon, M.D. 560 pages. Illus. Price $10.00, cloth. Ventnor, N. J.: Ventnor Publishers, Inc., 1949.

EVERYDAY PSYCHIATRY. Second Edition. John D. Campbell, M.D. Diplomate American Board of Neurology and Psychiatry; Psychiatrist to St. Joseph's Infirmary and Crawford W. Long Hospital, Atlanta, Georgia; Instructor in Psychiatry, Emory University Medical School; Captain M.C., U.S.N.R. 394 pages. Price $6.00, cloth. Philadelphia: J. B. Lippincott Co., 1949.

CORONARY ARTERY DISEASE. Ernest P. Boas, M.D. Associate Physician, Mount Sinai Hospital, New York City, and Norman F. Boas, M.D. 399 pages. Illus. Price $6.00, cloth. Chicago: Year Book Publishers, Inc., 1949.

DOCTORS OF INFAMY; THE STORY OF THE NAZI MEDICAL CRIMES. By Alexander Mitscherlich, M.D., Head of the German Medical Commission to Military Tribunal No. 1, Nurenberg and Fred Mielke. Trans. by Heinz Norden. 172 pages. Illus. $3.00. New York: Henry Schuman, 1949.

In this book of 172 pages is found a story of the medical crimes perpetrated in Nazi Germany. It gives documentary evidence of the medical atrocities performed by Nazi physicians under the guise of necessary experimentation. It illustrates the depths of degradation which was reached by many of the German physicians who were believers and followers of a false ideology.

This book, although depressing, is well worth reading for the lesson it teaches of a medical professon that succumbed to Fascism.

JOHN F. BRIGGS, M.D.

LECTURES TO THE LAITY. 174 pages, price $2.50. New York: Columbia University Press, 1949.

This latest volume of the New York Academy of Medicine's Lectures to the Laity reflects a forward-looking perspective that does credit to the Academy. Six eminent authorities discuss research and progress upon six of the most vitally important frontiers of medical research.

The list of contributing authors begins with Lewis L. Strauss of the U. S. Atomic Energy Commission and the Naval Research Advisory Board, who discusses the atom in civil life. Sir Raphael Cilento, director of the Social Division of the United Nations, surveys the relationship between food and civilization. Dr. Edward J. Stieglitz covers the lively subject of geriatrics; Dr. Cornelius P. Rhoads looks into the future of cancer research; Dr. William C. Menninger covers the subject of psychiatry for everyday needs; and James B. Conant,

President of Harvard University, contributes the final chapter, an acute and masterly discussion of the interrelation of pure and applied science in the field of medicine.

PATHOLOGY AND SURGERY OF THYROID DISEASE. By Joseph L. DeCourcy, M.D., Senior surgeon of the Good Samaritan Hospital, Cincinnati, Ohio, and Dr. Cornelius B. DeCourcy, resident member of staff of the Good Samaritan Hospital, Cincinnati, Ohio. 476 pages. Springfield, Illinois: Charles C. Thomas, 1949.

This book is a new and comprehensive discussion of every phase of thyroid anatomy, histology, pathology, pharmacotherapy and surgery, representing a review of more than 15,000 case histories of patients treated for thyroid disease at the DeCourcy Clinic, Cincinnati.

Dr. Joseph L. DeCourcy, author of the volume, is nationally known for his research in thyroid surgery. He has been a member of the American Goiter Association for two decades and a fellow of the American College of Surgeons. His son, Dr. Cornelius B. DeCourcy, is co-author of the work.

In addition to providing detailed information on new chemotherapy and the use of radio-active iodine in diagnosis and treatment, the book presents the most recent developments in thyroid surgery. The technique which has been perfected by the authors themselves is described in careful detail, supplemented by illustrations on each phase of the various procedures used. Meanwhile the authors have remained scrupulously unbiased in evaluating divergent or conflicting theories and principles, utilizing more than 673 references.

The book is a comprehensive and detailed review of the literature on every aspect of the many problems of the thyroid and the future of thyroid surgery.

SAFEGUARDING MOTHERHOOD. By Sol T. DeLee, M.D., Clinical Instructor of Obstetrics and Gynecology, University of Illinois; Attending Obstetrician at the Chicago Maternity Center: Former Associate in Obstetrics and Gynecology, Cook County Hospital. 135 pages, Illus. Price $2.00. Philadelphia: J. B. Lippincott Co., 1949.

Motherhood, a sacred event for a woman that is more or less dreaded by all expectant mothers, is very beautifully covered in this treatise.

It is almost superfluous to make any gestures when none other than J. P. Greenhill, M.D., precedes the text of the book by an excellent foreword. He is the same gentleman who does such a splendid job in editing the Yearbook of Obstetrics and Gynecology.

It is safe to say that this book will reach 90 per cent of the laity mothers. It is clear; it is simple, and it is not arbitrary. I can see in it the same clearness and simplicity that is evident in my 3rd edition of Principles and Practice of Obstetrics by the late Joseph B. DeLee, M.D., who is an uncle of this author. With due respect to other books on obstetrics, I still treasure as a keepsake this 3rd edition for the reasons mentioned and because it brings back memories of my undergraduate days.

Safeguarding Motherhood tells the mother everything she needs to know and yet does not keep her away from her obstetrician.

I can safely recommend this book to any expectant mother.

JOSEPH F. BICEK, M.D.

GIFFORD'S TEXTBOOK OF OPHTHALMOLOGY. By Francis H. Adler, M.D., Professor of Ophthalmology, University of Pennsylvania Medical School. 4th edition. 512 pages. Price $5.50. Philadelphia and London: W. B. Saunders Company, 1947.

This comprehensive revision was completed by the ophthalmologist chosen for this task by Dr. Gifford. Dr. Adler strove to carry out the original purpose of

the textbook; that is, to cover facts of value to the medical student and general practitioner. To this end, he has given special attention to minimizing the more technical aspects (refraction and operative procedures) and enlarging on the practical fundamentals.

The revisor's interest in physiology resulted in a great increase in physological material in order that the principles underlying disorders of the eye may be understood more clearly. The chapter on "Disturbances of Ocular Motility" has been entirely rewritten. The chapters on "Ocular Manifestations of General Disease" and on "Ocular Disorders of the Central Nervous System" are expanded, pertinent and valuable. In the former, Dr. Adler considers more than sixty common diseases, their eye signs and symptoms, and treatment in each case. The chapter on therapeutic agents includes such new drugs as penicillin and streptomycin.

An innovation is the addition of bibliographic references at the end of each chapter. These are of most value to the graduate student. More than seventy per cent of the 431 excellent illustrations are new for this edition.

This textbook ostensibly may be written for medical students and general practitioners, yet its well-prepared, up-to-date material will be found very useful to the postgraduate student or practicing ophthalmologist.

F. F. WIPPERMAN, M.D.

INDEX TO ADVERTISERS